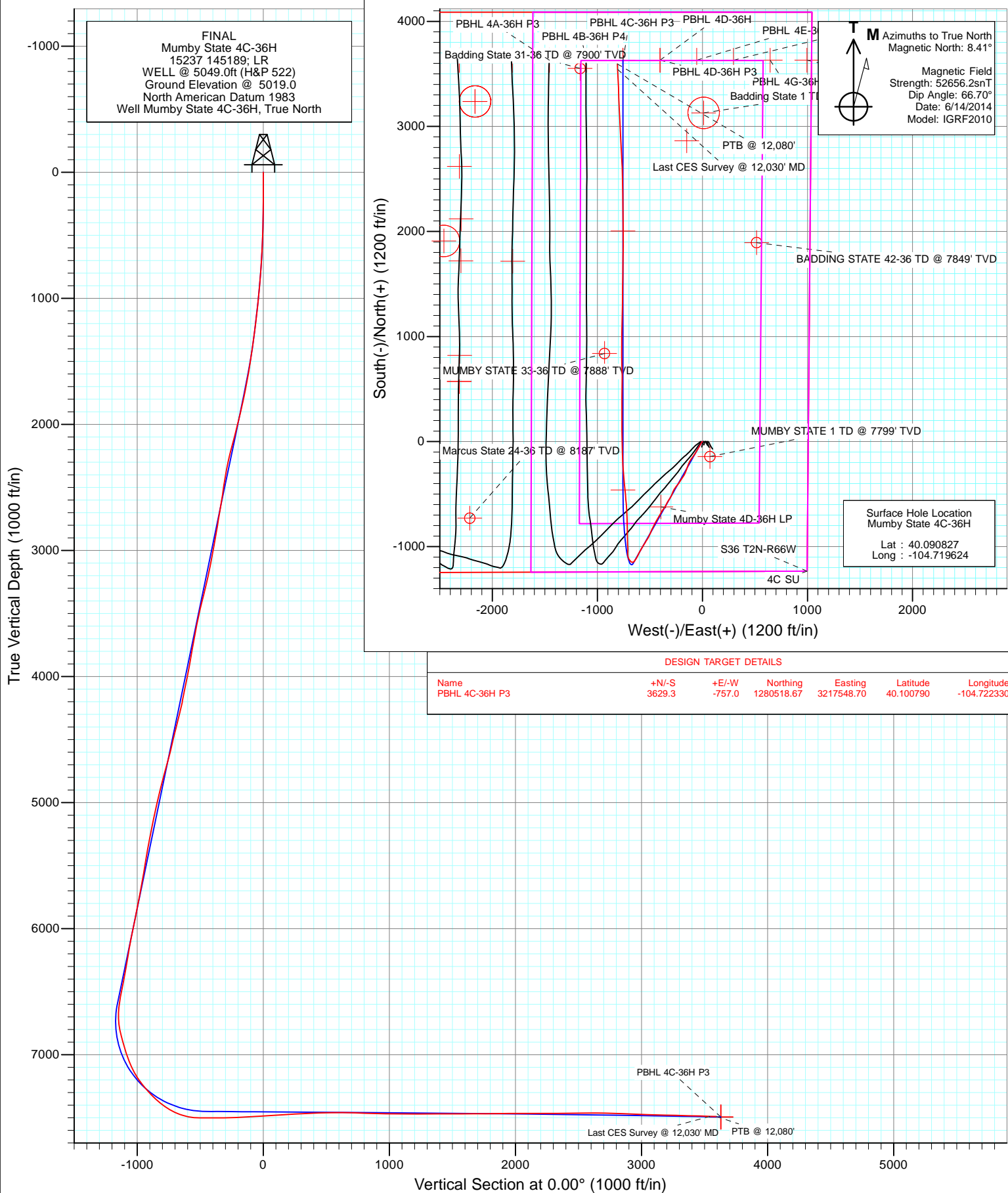


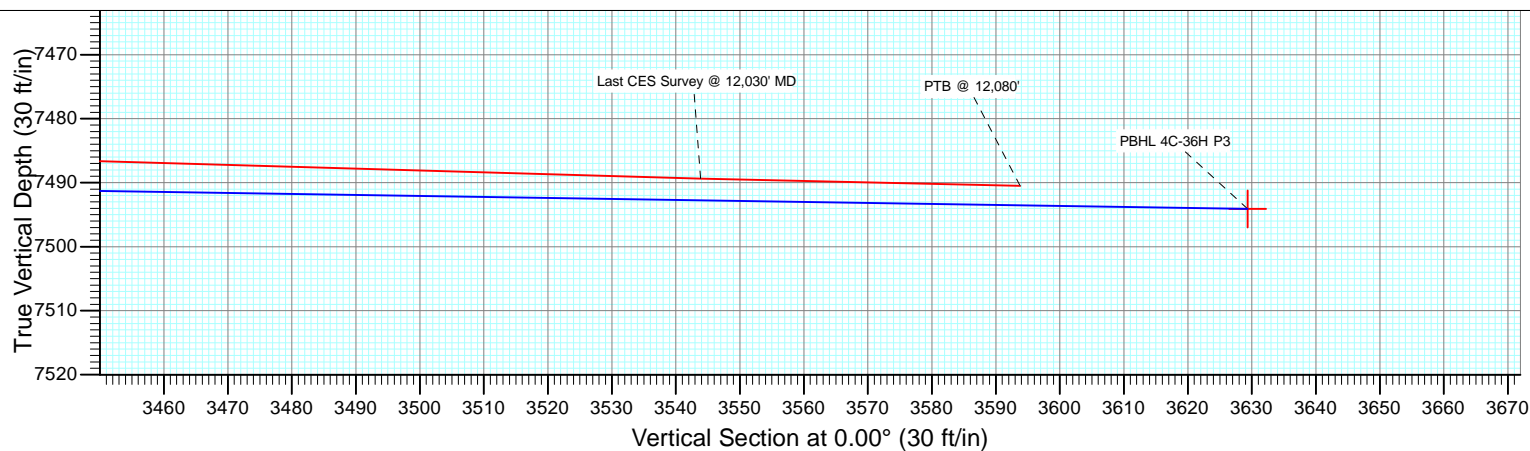
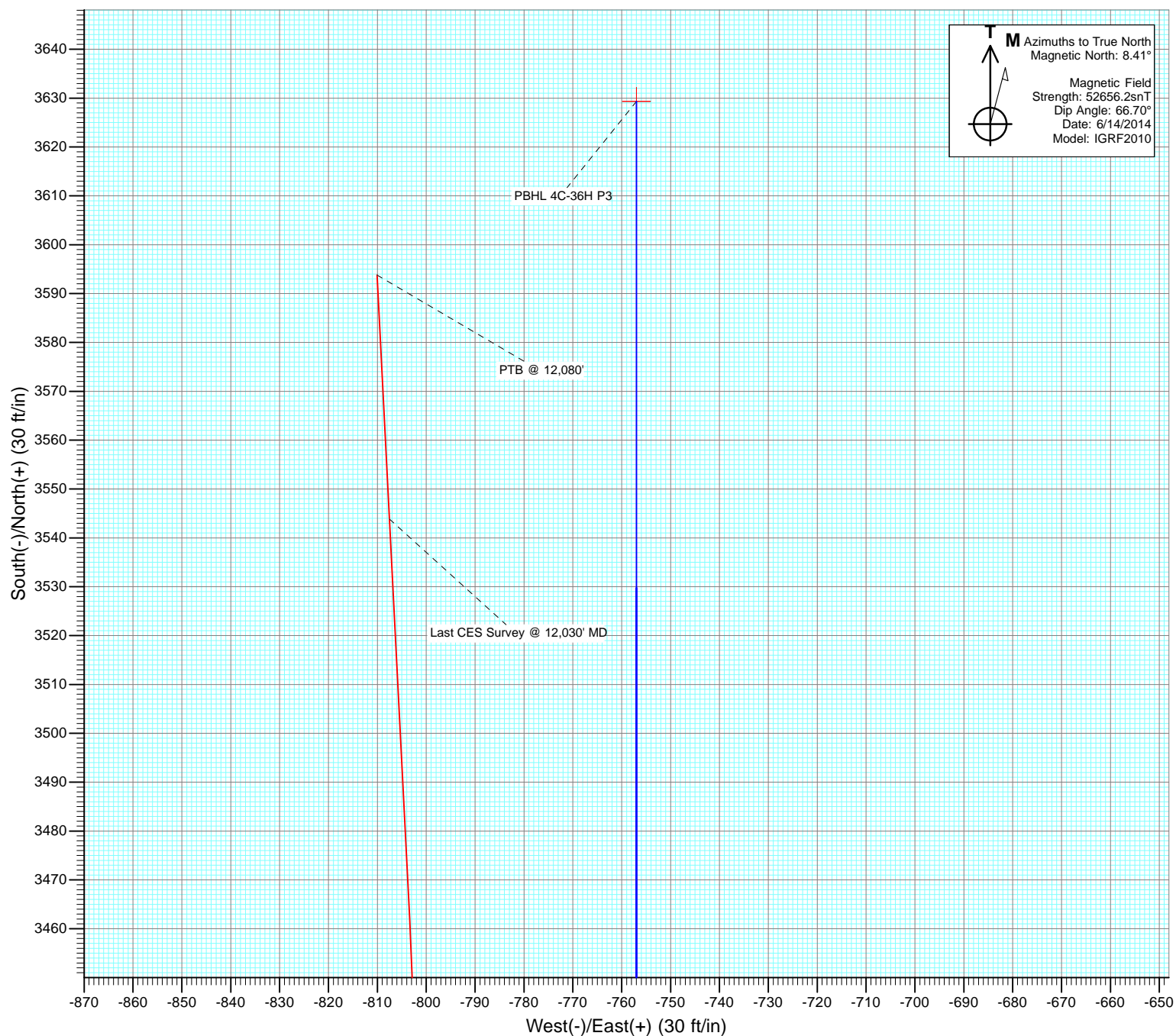


Project: DJ Wattenberg
 Site: S36 T2N-R66W (Marcus State, Mumby State)
 Well: Mumby State 4C-36H
 Wellbore: HZ
 Design: FINAL





Project: DJ Wattenberg
Site: S36 T2N-R66W (Marcus State, Mumby State)
Well: Mumby State 4C-36H
Wellbore: HZ
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site		S36 T2N-R66W (Marcus State, Mumby State)			
Site Position:		Northing:	1,275,942.66 ft	Latitude:	40.088280
From:	Lat/Long	Easting:	3,215,403.58 ft	Longitude:	-104.730140
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.50 °

Well	Mumby State 4C-36H					
Well Position	+N/-S	0.0 ft	Northing:	1,276,896.14 ft	Latitude:	40.090827
	+E/-W	0.0 ft	Easting:	3,218,337.59 ft	Longitude:	-104.719624
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,019.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/14/2014	8.41	66.70	52,656

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	0.00	

Survey Program	Date	7/14/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
141.0	12,080.0	Survey #1 (HZ)	Geolink MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
141.0	0.13	78.28	141.0	0.0	0.2	0.0	0.09	0.09		
233.0	0.80	278.41	233.0	0.1	-0.4	0.1	1.00	0.73		
325.0	0.83	200.10	325.0	-0.4	-1.2	-0.4	1.12	0.03		
417.0	2.33	221.81	417.0	-2.4	-2.7	-2.4	1.73	1.63		
509.0	2.59	215.39	508.9	-5.5	-5.2	-5.5	0.41	0.28		
601.0	2.59	215.39	600.8	-8.9	-7.6	-8.9	0.00	0.00		
693.0	4.31	211.09	692.6	-13.5	-10.6	-13.5	1.89	1.87		
785.0	4.97	203.88	784.3	-20.1	-14.0	-20.1	0.96	0.72		
877.0	5.84	217.85	875.9	-27.5	-18.4	-27.5	1.71	0.95		
969.0	6.90	214.87	967.3	-35.7	-24.5	-35.7	1.21	1.15		
1,061.0	6.94	209.24	1,058.7	-45.1	-30.4	-45.1	0.74	0.04		
1,188.0	6.80	205.10	1,184.7	-58.6	-37.3	-58.6	0.41	-0.11		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,280.0	9.20	214.10	1,275.8	-69.6	-43.7	-69.6	2.93	2.61	
1,372.0	9.90	209.80	1,366.6	-82.6	-51.8	-82.6	1.09	0.76	
1,464.0	10.60	204.80	1,457.1	-97.1	-59.3	-97.1	1.23	0.76	
1,556.0	9.70	218.80	1,547.7	-110.8	-67.7	-110.8	2.85	-0.98	
1,648.0	13.00	212.70	1,637.9	-125.6	-78.1	-125.6	3.81	3.59	
1,740.0	13.00	216.70	1,727.5	-142.6	-89.9	-142.6	0.98	0.00	
1,832.0	15.00	217.50	1,816.8	-160.3	-103.3	-160.3	2.18	2.17	
1,924.0	15.40	210.30	1,905.6	-180.3	-116.7	-180.3	2.10	0.43	
2,016.0	15.50	202.70	1,994.3	-202.2	-127.6	-202.2	2.20	0.11	
2,108.0	15.30	200.00	2,083.0	-225.0	-136.5	-225.0	0.81	-0.22	
2,200.0	15.50	199.60	2,171.6	-248.0	-144.8	-248.0	0.25	0.22	
2,292.0	14.20	200.10	2,260.6	-270.1	-152.8	-270.1	1.42	-1.41	
2,384.0	12.00	200.60	2,350.2	-289.7	-160.1	-289.7	2.39	-2.39	
2,476.0	10.40	208.70	2,440.4	-305.9	-167.4	-305.9	2.44	-1.74	
2,567.0	9.00	208.40	2,530.1	-319.4	-174.7	-319.4	1.54	-1.54	
2,659.0	11.10	214.40	2,620.7	-333.0	-183.2	-333.0	2.55	2.28	
2,751.0	12.10	214.60	2,710.8	-348.3	-193.7	-348.3	1.09	1.09	
2,846.0	10.60	212.50	2,804.0	-363.9	-204.0	-363.9	1.64	-1.58	
2,940.0	12.00	210.90	2,896.1	-379.5	-213.7	-379.5	1.53	1.49	
3,035.0	12.00	216.10	2,989.1	-396.0	-224.6	-396.0	1.14	0.00	
3,130.0	14.20	219.90	3,081.6	-412.9	-237.9	-412.9	2.49	2.32	
3,224.0	15.00	218.00	3,172.6	-431.3	-252.7	-431.3	0.99	0.85	
3,319.0	15.40	212.70	3,264.2	-451.6	-267.1	-451.6	1.52	0.42	
3,413.0	15.30	202.70	3,354.9	-473.6	-278.7	-473.6	2.81	-0.11	
3,508.0	14.10	203.10	3,446.8	-495.8	-288.0	-495.8	1.27	-1.26	
3,602.0	13.20	203.30	3,538.1	-516.2	-296.8	-516.2	0.96	-0.96	
3,697.0	13.50	212.70	3,630.6	-535.5	-307.0	-535.5	2.30	0.32	
3,791.0	10.90	210.20	3,722.4	-552.4	-317.4	-552.4	2.82	-2.77	
3,886.0	11.60	213.40	3,815.6	-568.1	-327.2	-568.1	0.99	0.74	
3,981.0	12.00	209.10	3,908.6	-584.7	-337.3	-584.7	1.02	0.42	
4,075.0	12.90	204.40	4,000.4	-602.8	-346.4	-602.8	1.44	0.96	
4,170.0	13.00	212.40	4,093.0	-621.5	-356.5	-621.5	1.89	0.11	
4,264.0	13.60	218.80	4,184.5	-639.1	-369.1	-639.1	1.69	0.64	
4,359.0	16.40	210.60	4,276.2	-659.3	-382.9	-659.3	3.69	2.95	
4,453.0	16.30	210.80	4,366.4	-682.1	-396.4	-682.1	0.12	-0.11	
4,548.0	15.20	210.50	4,457.9	-704.2	-409.6	-704.2	1.16	-1.16	
4,642.0	15.60	210.40	4,548.5	-725.8	-422.2	-725.8	0.43	0.43	
4,736.0	17.20	210.70	4,638.7	-748.6	-435.7	-748.6	1.70	1.70	
4,831.0	17.10	205.40	4,729.5	-773.3	-448.9	-773.3	1.65	-0.11	
4,926.0	16.00	207.10	4,820.5	-797.6	-460.8	-797.6	1.27	-1.16	
5,020.0	15.80	207.10	4,910.9	-820.5	-472.6	-820.5	0.21	-0.21	
5,115.0	14.00	204.00	5,002.7	-842.5	-483.1	-842.5	2.07	-1.89	
5,209.0	13.10	202.60	5,094.1	-862.7	-491.8	-862.7	1.02	-0.96	
5,304.0	11.90	201.80	5,186.9	-881.8	-499.6	-881.8	1.28	-1.26	
5,398.0	12.40	208.80	5,278.8	-899.6	-508.1	-899.6	1.65	0.53	
5,493.0	11.70	208.20	5,371.7	-917.1	-517.5	-917.1	0.75	-0.74	
5,588.0	11.30	215.50	5,464.8	-933.1	-527.5	-933.1	1.59	-0.42	
5,682.0	10.70	210.20	5,557.0	-948.2	-537.2	-948.2	1.25	-0.64	
5,777.0	12.60	211.30	5,650.1	-964.6	-547.1	-964.6	2.01	2.00	
5,871.0	12.10	211.90	5,741.9	-981.8	-557.6	-981.8	0.55	-0.53	
5,966.0	13.10	211.20	5,834.6	-999.4	-568.4	-999.4	1.06	1.05	
6,060.0	12.90	211.10	5,926.2	-1,017.5	-579.4	-1,017.5	0.21	-0.21	
6,155.0	13.50	210.60	6,018.7	-1,036.1	-590.5	-1,036.1	0.64	0.63	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,250.0	12.00	208.00	6,111.3	-1,054.4	-600.8	-1,054.4	1.69	-1.58	
6,344.0	10.20	201.50	6,203.6	-1,070.8	-608.4	-1,070.8	2.33	-1.91	
6,439.0	11.10	207.30	6,297.0	-1,086.7	-615.7	-1,086.7	1.47	0.95	
6,533.0	12.20	210.60	6,389.0	-1,103.3	-624.9	-1,103.3	1.37	1.17	
6,628.0	13.60	213.50	6,481.6	-1,121.3	-636.2	-1,121.3	1.62	1.47	
6,675.0	12.40	210.80	6,527.4	-1,130.2	-641.8	-1,130.2	2.86	-2.55	
6,723.0	11.60	216.60	6,574.4	-1,138.5	-647.3	-1,138.5	3.01	-1.67	
6,770.0	10.70	236.70	6,620.5	-1,144.7	-653.8	-1,144.7	8.44	-1.91	
6,817.0	11.10	257.60	6,666.7	-1,148.1	-661.9	-1,148.1	8.41	0.85	
6,864.0	11.10	279.80	6,712.8	-1,148.3	-670.7	-1,148.3	9.04	0.00	
6,912.0	12.30	303.30	6,759.8	-1,144.7	-679.6	-1,144.7	10.16	2.50	
6,959.0	15.20	321.60	6,805.5	-1,137.1	-687.6	-1,137.1	11.05	6.17	
7,006.0	16.30	326.30	6,850.7	-1,126.8	-695.1	-1,126.8	3.58	2.34	
7,053.0	17.40	334.60	6,895.7	-1,115.0	-701.7	-1,115.0	5.62	2.34	
7,101.0	17.60	343.90	6,941.5	-1,101.5	-706.8	-1,101.5	5.84	0.42	
7,148.0	17.70	351.40	6,986.3	-1,087.6	-709.9	-1,087.6	4.84	0.21	
7,195.0	20.70	0.10	7,030.7	-1,072.2	-710.9	-1,072.2	8.80	6.38	
7,242.0	22.90	2.20	7,074.3	-1,054.8	-710.6	-1,054.8	4.97	4.68	
7,290.0	26.50	0.20	7,117.9	-1,034.7	-710.2	-1,034.7	7.70	7.50	
7,337.0	30.30	359.00	7,159.3	-1,012.4	-710.3	-1,012.4	8.18	8.09	
7,385.0	34.70	357.90	7,199.7	-986.6	-711.1	-986.6	9.25	9.17	
7,432.0	38.10	357.40	7,237.6	-958.7	-712.2	-958.7	7.26	7.23	
7,479.0	40.60	357.70	7,273.9	-929.0	-713.5	-929.0	5.33	5.32	
7,511.0	42.50	358.40	7,297.9	-907.8	-714.2	-907.8	6.11	5.94	
7,537.0	44.30	358.70	7,316.7	-889.9	-714.6	-889.9	6.97	6.92	
7,601.0	48.10	359.00	7,361.0	-843.7	-715.6	-843.7	5.95	5.94	
7,648.0	51.70	359.80	7,391.3	-807.8	-715.9	-807.8	7.77	7.66	
7,696.0	56.40	358.40	7,419.5	-768.9	-716.6	-768.9	10.07	9.79	
7,743.0	62.00	357.40	7,443.5	-728.6	-718.0	-728.6	12.05	11.91	
7,791.0	67.10	357.40	7,464.2	-685.3	-720.0	-685.3	10.62	10.62	
7,838.0	72.70	357.10	7,480.3	-641.3	-722.1	-641.3	11.93	11.91	
7,885.0	78.40	355.70	7,492.0	-595.9	-725.0	-595.9	12.47	12.13	
7,932.0	84.40	354.20	7,499.1	-549.6	-729.1	-549.6	13.15	12.77	
7,980.0	90.20	355.00	7,501.3	-501.9	-733.6	-501.9	12.20	12.08	
8,074.0	89.60	354.70	7,501.5	-408.3	-742.0	-408.3	0.71	-0.64	
8,169.0	90.50	354.70	7,501.4	-313.7	-750.8	-313.7	0.95	0.95	
8,264.0	92.50	355.90	7,498.9	-219.0	-758.6	-219.0	2.45	2.11	
8,358.0	93.30	358.90	7,494.1	-125.3	-762.9	-125.3	3.30	0.85	
8,452.0	93.90	359.30	7,488.2	-31.5	-764.3	-31.5	0.77	0.64	
8,547.0	93.80	359.70	7,481.9	63.3	-765.2	63.3	0.43	-0.11	
8,641.0	93.10	359.60	7,476.2	157.2	-765.7	157.2	0.75	-0.74	
8,736.0	93.10	359.40	7,471.1	252.0	-766.6	252.0	0.21	0.00	
8,830.0	92.70	0.40	7,466.3	345.9	-766.7	345.9	1.14	-0.43	
8,924.0	91.70	0.50	7,462.7	439.8	-766.0	439.8	1.07	-1.06	
9,019.0	91.10	0.90	7,460.4	534.8	-764.8	534.8	0.76	-0.63	
9,113.0	89.50	359.70	7,459.9	628.8	-764.3	628.8	2.13	-1.70	
9,208.0	88.70	358.00	7,461.4	723.7	-766.2	723.7	1.98	-0.84	
9,302.0	88.00	359.20	7,464.1	817.7	-768.5	817.7	1.48	-0.74	
9,396.0	88.10	0.80	7,467.3	911.6	-768.5	911.6	1.70	0.11	
9,491.0	89.80	0.80	7,469.0	1,006.6	-767.2	1,006.6	1.79	1.79	
9,586.0	89.30	0.70	7,469.8	1,101.6	-766.0	1,101.6	0.54	-0.53	
9,680.0	89.70	1.50	7,470.6	1,195.5	-764.2	1,195.5	0.95	0.43	
9,774.0	90.50	0.90	7,470.4	1,289.5	-762.2	1,289.5	1.06	0.85	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,869.0	90.30	1.10	7,469.8	1,384.5	-760.5	1,384.5	0.30	-0.21	
9,963.0	90.40	0.80	7,469.2	1,478.5	-759.0	1,478.5	0.34	0.11	
10,058.0	89.80	0.70	7,469.0	1,573.5	-757.7	1,573.5	0.64	-0.63	
10,152.0	90.30	0.90	7,469.0	1,667.5	-756.4	1,667.5	0.57	0.53	
10,247.0	90.20	0.50	7,468.5	1,762.5	-755.3	1,762.5	0.43	-0.11	
10,341.0	90.70	1.10	7,467.8	1,856.5	-753.9	1,856.5	0.83	0.53	
10,436.0	90.30	359.70	7,467.0	1,951.4	-753.3	1,951.4	1.53	-0.42	
10,530.0	90.00	358.60	7,466.7	2,045.4	-754.7	2,045.4	1.21	-0.32	
10,625.0	90.10	359.30	7,466.6	2,140.4	-756.4	2,140.4	0.74	0.11	
10,719.0	90.30	359.30	7,466.3	2,234.4	-757.6	2,234.4	0.21	0.21	
10,814.0	90.20	359.90	7,465.9	2,329.4	-758.2	2,329.4	0.64	-0.11	
10,908.0	90.50	358.80	7,465.3	2,423.4	-759.3	2,423.4	1.21	0.32	
11,003.0	91.10	358.30	7,464.0	2,518.4	-761.7	2,518.4	0.82	0.63	
11,098.0	90.50	358.10	7,462.7	2,613.3	-764.7	2,613.3	0.67	-0.63	
11,192.0	88.60	357.00	7,463.4	2,707.2	-768.7	2,707.2	2.34	-2.02	
11,287.0	87.60	356.60	7,466.6	2,802.0	-774.0	2,802.0	1.13	-1.05	
11,381.0	88.10	357.10	7,470.1	2,895.8	-779.2	2,895.8	0.75	0.53	
11,476.0	88.30	357.60	7,473.1	2,990.7	-783.5	2,990.7	0.57	0.21	
11,570.0	88.10	356.50	7,476.0	3,084.5	-788.4	3,084.5	1.19	-0.21	
11,665.0	88.20	357.70	7,479.1	3,179.3	-793.2	3,179.3	1.27	0.11	
11,759.0	88.50	358.30	7,481.8	3,273.2	-796.5	3,273.2	0.71	0.32	
11,854.0	88.60	358.10	7,484.2	3,368.1	-799.4	3,368.1	0.24	0.11	
11,948.0	88.00	357.10	7,487.0	3,462.0	-803.4	3,462.0	1.24	-0.64	
12,030.0	88.70	357.10	7,489.4	3,543.9	-807.5	3,543.9	0.85	0.85	Last CES Survey @ 12,030' MD
12,080.0	88.70	357.10	7,490.5	3,593.8	-810.1	3,593.8	0.00	0.00	PTB @ 12,080'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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									
TGT 4C-36H	0.00	0.00	7,468.9	2,004.1	-757.0	1,278,893.50	3,217,562.98	40.096328	-104.722330
- actual wellpath misses target center by 3.8ft at 10488.7ft MD (7466.8 TVD, 2004.1 N, -753.8 E)									
- Point									
PBHL 4C-36H P3	0.00	0.00	7,494.1	3,629.3	-757.0	1,280,518.67	3,217,548.70	40.100790	-104.722330
- actual wellpath misses target center by 64.0ft at 12080.0ft MD (7490.5 TVD, 3593.8 N, -810.1 E)									
- Point									
PBHL 4C-36H	0.00	0.00	7,470.0	3,629.3	-757.0	1,280,518.67	3,217,548.70	40.100790	-104.722330
- actual wellpath misses target center by 67.1ft at 12080.0ft MD (7490.5 TVD, 3593.8 N, -810.1 E)									
- Point									
LP 4C-36H	0.00	0.00	7,450.0	-460.7	-757.0	1,276,428.80	3,217,584.67	40.089562	-104.722330
- actual wellpath misses target center by 54.9ft at 8023.0ft MD (7501.3 TVD, -459.0 N, -737.4 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
12,030.0	7,489.4	3,543.9	-807.5	Last CES Survey @ 12,030' MD	
12,080.0	7,490.5	3,593.8	-810.1	PTB @ 12,080'	

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S36 T2N-R66W (Marcus State, Mumby State)

Mumby State 4C-36H

HZ

Design: FINAL

Survey Report - Geographic

14 July, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site	S36 T2N-R66W (Marcus State, Mumby State)				
Site Position:		Northing:	1,275,942.66 ft	Latitude:	40.088280
From:	Lat/Long	Easting:	3,215,403.58 ft	Longitude:	-104.730140
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.50 °

Well	Mumby State 4C-36H					
Well Position	+N/-S	0.0 ft	Northing:	1,276,896.14 ft	Latitude:	40.090827
	+E/-W	0.0 ft	Easting:	3,218,337.59 ft	Longitude:	-104.719624
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,019.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/14/2014	8.41	66.70	52,656

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	0.00	

Survey Program	Date	7/14/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
141.0	12,080.0	Survey #1 (HZ)	Geolink MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,276,896.14	3,218,337.59	40.090827	-104.719624	
141.0	0.13	78.28	141.0	0.0	0.2	1,276,896.18	3,218,337.74	40.090827	-104.719624	
233.0	0.80	278.41	233.0	0.1	-0.4	1,276,896.29	3,218,337.21	40.090827	-104.719626	
325.0	0.83	200.10	325.0	-0.4	-1.2	1,276,895.75	3,218,336.35	40.090826	-104.719629	
417.0	2.33	221.81	417.0	-2.4	-2.7	1,276,893.71	3,218,334.89	40.090820	-104.719634	
509.0	2.59	215.39	508.9	-5.5	-5.2	1,276,890.61	3,218,332.47	40.090812	-104.719643	
601.0	2.59	215.39	600.8	-8.9	-7.6	1,276,887.19	3,218,330.09	40.090803	-104.719651	
693.0	4.31	211.09	692.6	-13.5	-10.6	1,276,882.51	3,218,327.14	40.090790	-104.719662	
785.0	4.97	203.88	784.3	-20.1	-14.0	1,276,875.88	3,218,323.80	40.090772	-104.719674	
877.0	5.84	217.85	875.9	-27.5	-18.4	1,276,868.50	3,218,319.38	40.090752	-104.719690	
969.0	6.90	214.87	967.3	-35.7	-24.5	1,276,860.22	3,218,313.42	40.090729	-104.719712	
1,061.0	6.94	209.24	1,058.7	-45.1	-30.4	1,276,850.78	3,218,307.63	40.090703	-104.719733	

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
1,188.0	6.80	205.10	1,184.7	-58.6	-37.3	1,276,837.22	3,218,300.81	40.090666	-104.719758
1,280.0	9.20	214.10	1,275.8	-69.6	-43.7	1,276,826.14	3,218,294.48	40.090636	-104.719781
1,372.0	9.90	209.80	1,366.6	-82.6	-51.8	1,276,813.11	3,218,286.54	40.090600	-104.719809
1,464.0	10.60	204.80	1,457.1	-97.1	-59.3	1,276,798.50	3,218,279.18	40.090560	-104.719836
1,556.0	9.70	218.80	1,547.7	-110.8	-67.7	1,276,784.71	3,218,270.90	40.090523	-104.719866
1,648.0	13.00	212.70	1,637.9	-125.6	-78.1	1,276,769.86	3,218,260.58	40.090482	-104.719903
1,740.0	13.00	216.70	1,727.5	-142.6	-89.9	1,276,752.75	3,218,248.95	40.090436	-104.719946
1,832.0	15.00	217.50	1,816.8	-160.3	-103.3	1,276,734.89	3,218,235.68	40.090387	-104.719994
1,924.0	15.40	210.30	1,905.6	-180.3	-116.7	1,276,714.78	3,218,222.44	40.090332	-104.720042
2,016.0	15.50	202.70	1,994.3	-202.2	-127.6	1,276,692.80	3,218,211.73	40.090272	-104.720080
2,108.0	15.30	200.00	2,083.0	-225.0	-136.5	1,276,669.97	3,218,203.03	40.090209	-104.720112
2,200.0	15.50	199.60	2,171.6	-248.0	-144.8	1,276,646.91	3,218,194.96	40.090146	-104.720142
2,292.0	14.20	200.10	2,260.6	-270.1	-152.8	1,276,624.66	3,218,187.15	40.090085	-104.720170
2,384.0	12.00	200.60	2,350.2	-289.7	-160.1	1,276,605.05	3,218,180.08	40.090032	-104.720196
2,476.0	10.40	208.70	2,440.4	-305.9	-167.4	1,276,588.75	3,218,172.87	40.089987	-104.720223
2,567.0	9.00	208.40	2,530.1	-319.4	-174.7	1,276,575.22	3,218,165.66	40.089950	-104.720249
2,659.0	11.10	214.40	2,620.7	-333.0	-183.2	1,276,561.50	3,218,157.35	40.089913	-104.720279
2,751.0	12.10	214.60	2,710.8	-348.3	-193.7	1,276,546.17	3,218,147.01	40.089871	-104.720316
2,846.0	10.60	212.50	2,804.0	-363.9	-204.0	1,276,530.51	3,218,136.80	40.089828	-104.720353
2,940.0	12.00	210.90	2,896.1	-379.5	-213.7	1,276,514.75	3,218,127.27	40.089785	-104.720388
3,035.0	12.00	216.10	2,989.1	-396.0	-224.6	1,276,498.20	3,218,116.53	40.089740	-104.720427
3,130.0	14.20	219.90	3,081.6	-412.9	-237.9	1,276,481.16	3,218,103.38	40.089694	-104.720474
3,224.0	15.00	218.00	3,172.6	-431.3	-252.7	1,276,462.60	3,218,088.66	40.089643	-104.720528
3,319.0	15.40	212.70	3,264.2	-451.6	-267.1	1,276,442.17	3,218,074.45	40.089587	-104.720579
3,413.0	15.30	202.70	3,354.9	-473.6	-278.7	1,276,420.12	3,218,063.12	40.089527	-104.720620
3,508.0	14.10	203.10	3,446.8	-495.8	-288.0	1,276,397.83	3,218,053.93	40.089466	-104.720654
3,602.0	13.20	203.30	3,538.1	-516.2	-296.8	1,276,377.37	3,218,045.38	40.089410	-104.720685
3,697.0	13.50	212.70	3,630.6	-535.5	-307.0	1,276,357.98	3,218,035.26	40.089357	-104.720722
3,791.0	10.90	210.20	3,722.4	-552.4	-317.4	1,276,340.97	3,218,025.01	40.089311	-104.720759
3,886.0	11.60	213.40	3,815.6	-568.1	-327.2	1,276,325.15	3,218,015.38	40.089267	-104.720794
3,981.0	12.00	209.10	3,908.6	-584.7	-337.3	1,276,308.46	3,218,005.46	40.089222	-104.720830
4,075.0	12.90	204.40	4,000.4	-602.8	-346.4	1,276,290.29	3,217,996.53	40.089172	-104.720862
4,170.0	13.00	212.40	4,093.0	-621.5	-356.5	1,276,271.52	3,217,986.59	40.089121	-104.720898
4,264.0	13.60	218.80	4,184.5	-639.1	-369.1	1,276,253.87	3,217,974.16	40.089073	-104.720943
4,359.0	16.40	210.60	4,276.2	-659.3	-382.9	1,276,233.49	3,217,960.50	40.089017	-104.720993
4,453.0	16.30	210.80	4,366.4	-682.1	-396.4	1,276,210.62	3,217,947.20	40.088955	-104.721041
4,548.0	15.20	210.50	4,457.9	-704.2	-409.6	1,276,188.32	3,217,934.24	40.088894	-104.721088
4,642.0	15.60	210.40	4,548.5	-725.8	-422.2	1,276,166.69	3,217,921.78	40.088835	-104.721133
4,736.0	17.20	210.70	4,638.7	-748.6	-435.7	1,276,143.72	3,217,908.49	40.088772	-104.721182
4,831.0	17.10	205.40	4,729.5	-773.3	-448.9	1,276,118.91	3,217,895.55	40.088704	-104.721229
4,926.0	16.00	207.10	4,820.5	-797.6	-460.8	1,276,094.53	3,217,883.81	40.088638	-104.721271
5,020.0	15.80	207.10	4,910.9	-820.5	-472.6	1,276,071.51	3,217,872.28	40.088575	-104.721313
5,115.0	14.00	204.00	5,002.7	-842.5	-483.1	1,276,049.40	3,217,861.90	40.088514	-104.721351
5,209.0	13.10	202.60	5,094.1	-862.7	-491.8	1,276,029.10	3,217,853.36	40.088459	-104.721382
5,304.0	11.90	201.80	5,186.9	-881.8	-499.6	1,276,010.00	3,217,845.76	40.088406	-104.721410
5,398.0	12.40	208.80	5,278.8	-899.6	-508.1	1,275,992.08	3,217,837.45	40.088357	-104.721440
5,493.0	11.70	208.20	5,371.7	-917.1	-517.5	1,275,974.57	3,217,828.14	40.088310	-104.721474
5,588.0	11.30	215.50	5,464.8	-933.1	-527.5	1,275,958.42	3,217,818.32	40.088265	-104.721510
5,682.0	10.70	210.20	5,557.0	-948.2	-537.2	1,275,943.29	3,217,808.72	40.088224	-104.721544
5,777.0	12.60	211.30	5,650.1	-964.6	-547.1	1,275,926.73	3,217,799.04	40.088179	-104.721579
5,871.0	12.10	211.90	5,741.9	-981.8	-557.6	1,275,909.51	3,217,788.66	40.088132	-104.721617
5,966.0	13.10	211.20	5,834.6	-999.4	-568.4	1,275,891.76	3,217,777.98	40.088083	-104.721656
6,060.0	12.90	211.10	5,926.2	-1,017.5	-579.4	1,275,873.56	3,217,767.20	40.088034	-104.721695
6,155.0	13.50	210.60	6,018.7	-1,036.1	-590.5	1,275,854.84	3,217,756.24	40.087983	-104.721735
6,250.0	12.00	208.00	6,111.3	-1,054.4	-600.8	1,275,836.49	3,217,746.12	40.087933	-104.721771

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
6,344.0	10.20	201.50	6,203.6	-1,070.8	-608.4	1,275,820.05	3,217,738.63	40.087888	-104.721799
6,439.0	11.10	207.30	6,297.0	-1,086.7	-615.7	1,275,804.03	3,217,731.49	40.087844	-104.721825
6,533.0	12.20	210.60	6,389.0	-1,103.3	-624.9	1,275,787.36	3,217,722.43	40.087798	-104.721858
6,628.0	13.60	213.50	6,481.6	-1,121.3	-636.2	1,275,769.31	3,217,711.31	40.087749	-104.721898
6,675.0	12.40	210.80	6,527.4	-1,130.2	-641.8	1,275,760.31	3,217,705.76	40.087724	-104.721918
6,723.0	11.60	216.60	6,574.4	-1,138.5	-647.3	1,275,751.96	3,217,700.32	40.087702	-104.721938
6,770.0	10.70	236.70	6,620.5	-1,144.7	-653.8	1,275,745.72	3,217,693.90	40.087685	-104.721961
6,817.0	11.10	257.60	6,666.7	-1,148.1	-661.9	1,275,742.28	3,217,685.87	40.087675	-104.721990
6,864.0	11.10	279.80	6,712.8	-1,148.3	-670.7	1,275,742.00	3,217,676.99	40.087675	-104.722022
6,912.0	12.30	303.30	6,759.8	-1,144.7	-679.6	1,275,745.51	3,217,668.12	40.087685	-104.722053
6,959.0	15.20	321.60	6,805.5	-1,137.1	-687.6	1,275,753.03	3,217,660.04	40.087705	-104.722082
7,006.0	16.30	326.30	6,850.7	-1,126.8	-695.1	1,275,763.28	3,217,652.46	40.087734	-104.722108
7,053.0	17.40	334.60	6,895.7	-1,115.0	-701.7	1,275,775.05	3,217,645.68	40.087766	-104.722132
7,101.0	17.60	343.90	6,941.5	-1,101.5	-706.8	1,275,788.47	3,217,640.47	40.087803	-104.722151
7,148.0	17.70	351.40	6,986.3	-1,087.6	-709.9	1,275,802.33	3,217,637.31	40.087841	-104.722161
7,195.0	20.70	0.10	7,030.7	-1,072.2	-710.9	1,275,817.70	3,217,636.12	40.087884	-104.722165
7,242.0	22.90	2.20	7,074.3	-1,054.8	-710.6	1,275,835.15	3,217,636.33	40.087931	-104.722164
7,290.0	26.50	0.20	7,117.9	-1,034.7	-710.2	1,275,855.20	3,217,636.55	40.087987	-104.722162
7,337.0	30.30	359.00	7,159.3	-1,012.4	-710.3	1,275,877.55	3,217,636.19	40.088048	-104.722163
7,385.0	34.70	357.90	7,199.7	-986.6	-711.1	1,275,903.31	3,217,635.25	40.088119	-104.722166
7,432.0	38.10	357.40	7,237.6	-958.7	-712.2	1,275,931.16	3,217,633.85	40.088195	-104.722170
7,479.0	40.60	357.70	7,273.9	-929.0	-713.5	1,275,960.92	3,217,632.32	40.088277	-104.722174
7,511.0	42.50	358.40	7,297.9	-907.8	-714.2	1,275,982.13	3,217,631.41	40.088335	-104.722177
7,537.0	44.30	358.70	7,316.7	-889.9	-714.6	1,275,999.98	3,217,630.81	40.088384	-104.722178
7,601.0	48.10	359.00	7,361.0	-843.7	-715.6	1,276,046.15	3,217,629.48	40.088511	-104.722182
7,648.0	51.70	359.80	7,391.3	-807.8	-715.9	1,276,082.08	3,217,628.79	40.088610	-104.722183
7,696.0	56.40	358.40	7,419.5	-768.9	-716.6	1,276,120.92	3,217,627.82	40.088716	-104.722185
7,743.0	62.00	357.40	7,443.5	-728.6	-718.0	1,276,161.23	3,217,625.98	40.088827	-104.722191
7,791.0	67.10	357.40	7,464.2	-685.3	-720.0	1,276,204.49	3,217,623.63	40.088946	-104.722198
7,838.0	72.70	357.10	7,480.3	-641.3	-722.1	1,276,248.54	3,217,621.13	40.089067	-104.722205
7,885.0	78.40	355.70	7,492.0	-595.9	-725.0	1,276,293.92	3,217,617.86	40.089191	-104.722215
7,932.0	84.40	354.20	7,499.1	-549.6	-729.1	1,276,340.15	3,217,613.36	40.089318	-104.722230
7,980.0	90.20	355.00	7,501.3	-501.9	-733.6	1,276,387.82	3,217,608.44	40.089449	-104.722246
8,074.0	89.60	354.70	7,501.5	-408.3	-742.0	1,276,481.36	3,217,599.17	40.089706	-104.722276
8,169.0	90.50	354.70	7,501.4	-313.7	-750.8	1,276,575.87	3,217,589.57	40.089966	-104.722308
8,264.0	92.50	355.90	7,498.9	-219.0	-758.6	1,276,670.44	3,217,580.95	40.090226	-104.722336
8,358.0	93.30	358.90	7,494.1	-125.3	-762.9	1,276,764.17	3,217,575.87	40.090483	-104.722351
8,452.0	93.90	359.30	7,488.2	-31.5	-764.3	1,276,857.96	3,217,573.57	40.090741	-104.722356
8,547.0	93.80	359.70	7,481.9	63.3	-765.2	1,276,952.73	3,217,571.91	40.091001	-104.722359
8,641.0	93.10	359.60	7,476.2	157.2	-765.7	1,277,046.55	3,217,570.51	40.091258	-104.722361
8,736.0	93.10	359.40	7,471.1	252.0	-766.6	1,277,141.39	3,217,568.85	40.091519	-104.722364
8,830.0	92.70	0.40	7,466.3	345.9	-766.7	1,277,235.27	3,217,567.86	40.091777	-104.722365
8,924.0	91.70	0.50	7,462.7	439.8	-766.0	1,277,329.20	3,217,567.77	40.092034	-104.722362
9,019.0	91.10	0.90	7,460.4	534.8	-764.8	1,277,424.17	3,217,568.09	40.092295	-104.722358
9,113.0	89.50	359.70	7,459.9	628.8	-764.3	1,277,518.16	3,217,567.76	40.092553	-104.722356
9,208.0	88.70	358.00	7,461.4	723.7	-766.2	1,277,613.11	3,217,565.02	40.092814	-104.722363
9,302.0	88.00	359.20	7,464.1	817.7	-768.5	1,277,707.01	3,217,561.89	40.093072	-104.722371
9,396.0	88.10	0.80	7,467.3	911.6	-768.5	1,277,800.95	3,217,561.07	40.093330	-104.722371
9,491.0	89.80	0.80	7,469.0	1,006.6	-767.2	1,277,895.93	3,217,561.56	40.093590	-104.722367
9,586.0	89.30	0.70	7,469.8	1,101.6	-766.0	1,277,990.93	3,217,561.96	40.093851	-104.722362
9,680.0	89.70	1.50	7,470.6	1,195.5	-764.2	1,278,084.92	3,217,562.94	40.094109	-104.722356
9,774.0	90.50	0.90	7,470.4	1,289.5	-762.2	1,278,178.91	3,217,564.08	40.094367	-104.722349
9,869.0	90.30	1.10	7,469.8	1,384.5	-760.5	1,278,273.90	3,217,564.91	40.094628	-104.722343
9,963.0	90.40	0.80	7,469.2	1,478.5	-759.0	1,278,367.90	3,217,565.64	40.094886	-104.722337
10,058.0	89.80	0.70	7,469.0	1,573.5	-757.7	1,278,462.90	3,217,566.04	40.095146	-104.722333

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mumby State 4C-36H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5049.0ft (H&P 522)
Site:	S36 T2N-R66W (Marcus State, Mumby State)	MD Reference:	WELL @ 5049.0ft (H&P 522)
Well:	Mumby State 4C-36H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
10,152.0	90.30	0.90	7,469.0	1,667.5	-756.4	1,278,556.89	3,217,566.53	40.095404	-104.722328
10,247.0	90.20	0.50	7,468.5	1,762.5	-755.3	1,278,651.89	3,217,566.85	40.095665	-104.722324
10,341.0	90.70	1.10	7,467.8	1,856.5	-753.9	1,278,745.89	3,217,567.34	40.095923	-104.722319
10,436.0	90.30	359.70	7,467.0	1,951.4	-753.3	1,278,840.88	3,217,567.17	40.096184	-104.722317
10,530.0	90.00	358.60	7,466.7	2,045.4	-754.7	1,278,934.85	3,217,564.94	40.096442	-104.722322
10,625.0	90.10	359.30	7,466.6	2,140.4	-756.4	1,279,029.82	3,217,562.37	40.096703	-104.722328
10,719.0	90.30	359.30	7,466.3	2,234.4	-757.6	1,279,123.80	3,217,560.39	40.096961	-104.722332
10,814.0	90.20	359.90	7,465.9	2,329.4	-758.2	1,279,218.78	3,217,558.89	40.097222	-104.722335
10,908.0	90.50	358.80	7,465.3	2,423.4	-759.3	1,279,312.76	3,217,557.00	40.097480	-104.722338
11,003.0	91.10	358.30	7,464.0	2,518.4	-761.7	1,279,407.70	3,217,553.76	40.097740	-104.722347
11,098.0	90.50	358.10	7,462.7	2,613.3	-764.7	1,279,502.61	3,217,549.94	40.098001	-104.722358
11,192.0	88.60	357.00	7,463.4	2,707.2	-768.7	1,279,596.48	3,217,545.10	40.098259	-104.722372
11,287.0	87.60	356.60	7,466.6	2,802.0	-774.0	1,279,691.22	3,217,538.96	40.098519	-104.722391
11,381.0	88.10	357.10	7,470.1	2,895.8	-779.2	1,279,784.97	3,217,532.98	40.098776	-104.722409
11,476.0	88.30	357.60	7,473.1	2,990.7	-783.5	1,279,879.80	3,217,527.75	40.099037	-104.722425
11,570.0	88.10	356.50	7,476.0	3,084.5	-788.4	1,279,973.58	3,217,522.09	40.099294	-104.722442
11,665.0	88.20	357.70	7,479.1	3,179.3	-793.2	1,280,068.36	3,217,516.45	40.099555	-104.722460
11,759.0	88.50	358.30	7,481.8	3,273.2	-796.5	1,280,162.23	3,217,512.35	40.099813	-104.722471
11,854.0	88.60	358.10	7,484.2	3,368.1	-799.4	1,280,257.12	3,217,508.53	40.100073	-104.722482
11,948.0	88.00	357.10	7,487.0	3,462.0	-803.4	1,280,350.96	3,217,503.77	40.100331	-104.722496
12,030.0	88.70	357.10	7,489.4	3,543.9	-807.5	1,280,432.76	3,217,498.90	40.100555	-104.722511
Last CES Survey @ 12,030' MD									
12,080.0	88.70	357.10	7,490.5	3,593.8	-810.1	1,280,482.66	3,217,495.93	40.100692	-104.722520
PTB @ 12,080'									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL 4C-36H P3	0.00	0.00	7,494.1	3,629.3	-757.0	1,280,518.67	3,217,548.70	40.100790	-104.722330
- actual wellpath misses target center by 64.0ft at 12080.0ft MD (7490.5 TVD, 3593.8 N, -810.1 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
12,030.0	7,489.4	3,543.9	-807.5	Last CES Survey @ 12,030' MD	
12,080.0	7,490.5	3,593.8	-810.1	PTB @ 12,080'	

Checked By: _____ Approved By: _____ Date: _____