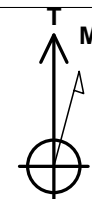


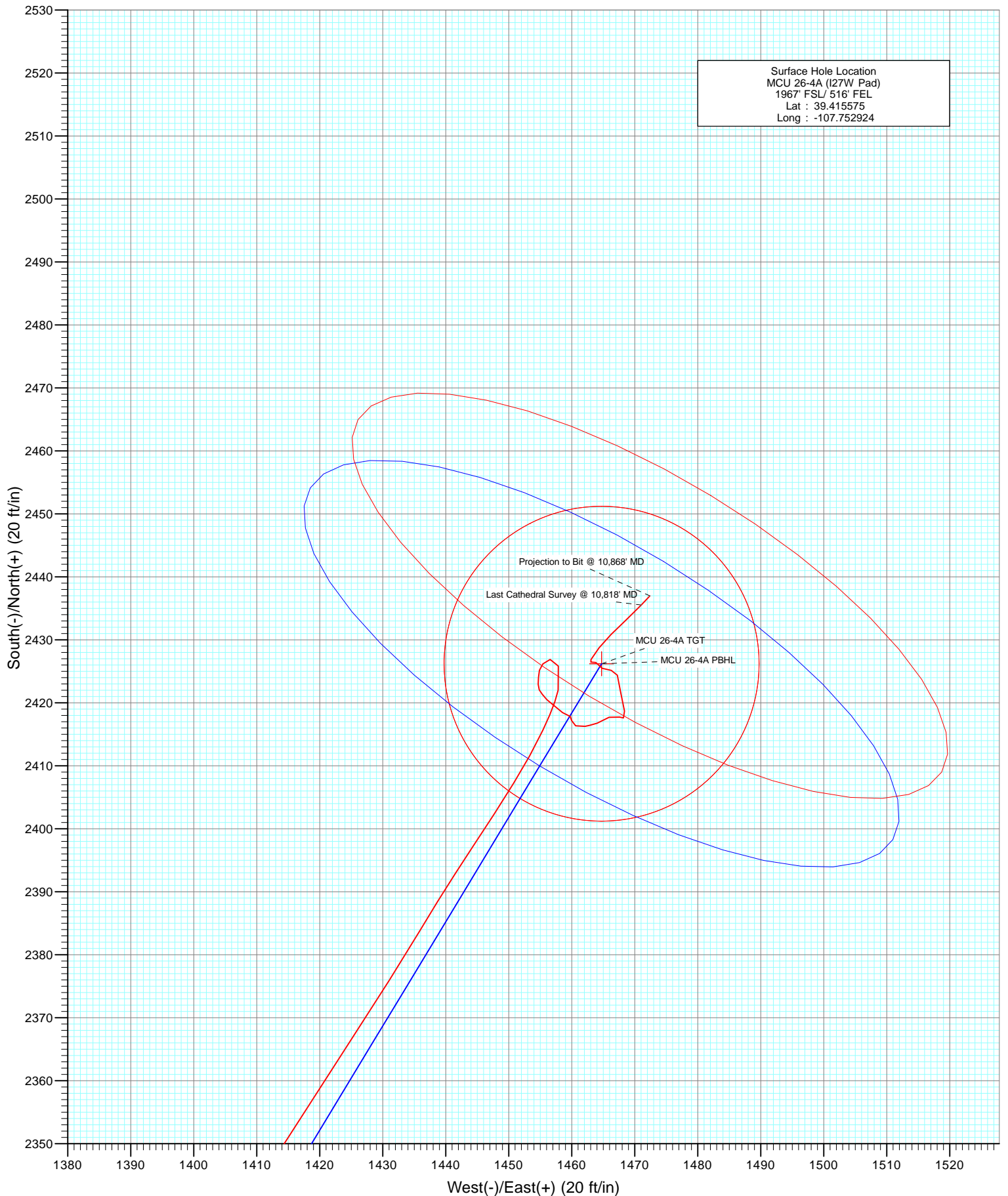
FORMATION TOP DETAILS

No formation data is available



Azimuths to True North
 Magnetic North: 10.03°

Magnetic Field
 Strength: 52073.3snT
 Dip Angle: 65.68°
 Date: 12/26/2012
 Model: IGRF2010



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 26-4A (I27W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7223.0ft (Nabors M15)
Site:	I27W	MD Reference:	KBE @ 7223.0ft (Nabors M15)
Well:	MCU 26-4A (I27W Pad)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Mamm Creek		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		I27W			
Site Position:		Northing:	1,584,160.49 ft	Latitude:	39.415612
From:	Lat/Long	Easting:	2,363,622.14 ft	Longitude:	-107.752731
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.42 °

Well	MCU 26-4A (I27W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,584,148.35 ft	Latitude:	39.415575
	+E/-W	0.0 ft	Easting:	2,363,567.29 ft	Longitude:	-107.752924
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,201.0 ft

Wellbore		DD			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/26/2012	10.03	65.68	52,073

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	30.63

Survey Program		Date	1/14/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
214.0	10,868.0	Survey #1 (DD)	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	
214.0	0.70	46.00	214.0	0.9	0.9	1.3	0.33	0.33	
245.0	1.00	54.70	245.0	1.2	1.3	1.7	1.05	0.97	
276.0	1.70	43.50	276.0	1.7	1.8	2.4	2.40	2.26	
306.0	2.60	50.80	306.0	2.4	2.7	3.5	3.13	3.00	
397.0	6.20	40.70	396.7	7.5	7.5	10.2	4.03	3.96	
489.0	9.00	33.80	487.9	17.2	14.7	22.3	3.20	3.04	
581.0	11.40	32.30	578.4	30.9	23.6	38.6	2.62	2.61	
672.0	14.20	29.10	667.1	48.2	33.8	58.7	3.17	3.08	
763.0	16.70	27.70	754.8	69.6	45.3	83.0	2.78	2.75	
854.0	18.50	27.00	841.6	94.0	58.0	110.4	1.99	1.98	
946.0	21.30	31.80	928.1	121.2	73.4	141.7	3.52	3.04	
1,039.0	23.20	32.10	1,014.2	151.1	92.0	176.9	2.05	2.04	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 26-4A (I27W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7223.0ft (Nabors M15)
Site:	I27W	MD Reference:	KBE @ 7223.0ft (Nabors M15)
Well:	MCU 26-4A (I27W Pad)	North Reference:	True
Wellbore:	DD	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
1,135.0	24.50	31.80	1,102.0	184.0	112.6	215.7	1.36	1.35	
1,230.0	25.30	30.80	1,188.1	218.2	133.3	255.7	0.95	0.84	
1,326.0	26.00	29.90	1,274.7	254.1	154.3	297.3	0.83	0.73	
1,420.0	26.70	29.80	1,358.9	290.3	175.1	339.0	0.75	0.74	
1,515.0	25.60	29.20	1,444.2	326.7	195.7	380.8	1.19	-1.16	
1,611.0	24.30	28.20	1,531.2	362.2	215.2	421.3	1.42	-1.35	
1,642.0	24.20	27.90	1,559.5	373.5	221.2	434.0	0.51	-0.32	
1,747.0	24.20	26.50	1,655.2	411.7	240.8	477.0	0.55	0.00	
1,843.0	23.60	27.90	1,743.0	446.3	258.6	515.8	0.86	-0.62	
1,938.0	23.70	29.20	1,830.0	479.8	276.8	553.9	0.56	0.11	
2,034.0	24.30	29.00	1,917.7	513.9	295.8	592.9	0.63	0.62	
2,131.0	24.70	30.40	2,006.0	548.9	315.7	633.2	0.73	0.41	
2,226.0	25.10	31.30	2,092.2	583.2	336.3	673.1	0.58	0.42	
2,322.0	24.70	31.60	2,179.3	617.7	357.3	713.6	0.44	-0.42	
2,418.0	25.10	32.40	2,266.3	652.0	378.8	754.0	0.54	0.42	
2,514.0	24.90	31.10	2,353.3	686.5	400.1	794.5	0.61	-0.21	
2,610.0	24.40	31.40	2,440.6	720.7	420.9	834.6	0.54	-0.52	
2,706.0	24.30	31.20	2,528.0	754.5	441.4	874.1	0.14	-0.10	
2,801.0	24.50	31.10	2,614.6	788.1	461.7	913.4	0.21	0.21	
2,897.0	24.20	30.60	2,702.0	822.1	482.0	953.0	0.38	-0.31	
2,993.0	25.40	32.30	2,789.2	856.4	503.1	993.2	1.45	1.25	
3,089.0	24.90	31.70	2,876.1	891.0	524.7	1,034.0	0.58	-0.52	
3,185.0	24.70	31.10	2,963.2	925.4	545.7	1,074.3	0.33	-0.21	
3,281.0	24.30	31.00	3,050.6	959.5	566.2	1,114.1	0.42	-0.42	
3,376.0	24.20	32.50	3,137.2	992.7	586.7	1,153.1	0.66	-0.11	
3,472.0	23.20	33.00	3,225.1	1,025.1	607.6	1,191.7	1.06	-1.04	
3,567.0	23.40	32.40	3,312.3	1,056.7	627.9	1,229.2	0.33	0.21	
3,663.0	23.60	32.40	3,400.4	1,089.1	648.4	1,267.5	0.21	0.21	
3,759.0	24.20	31.70	3,488.2	1,122.0	669.0	1,306.4	0.69	0.62	
3,855.0	24.70	31.10	3,575.5	1,155.9	689.7	1,346.1	0.58	0.52	
3,950.0	25.50	32.10	3,661.6	1,190.3	710.9	1,386.4	0.95	0.84	
4,047.0	25.00	32.30	3,749.3	1,225.3	732.9	1,427.7	0.52	-0.52	
4,142.0	24.70	30.50	3,835.5	1,259.3	753.7	1,467.7	0.86	-0.32	
4,238.0	24.30	31.60	3,922.9	1,293.5	774.2	1,507.5	0.63	-0.42	
4,334.0	24.70	31.70	4,010.2	1,327.3	795.1	1,547.3	0.42	0.42	
4,430.0	24.10	31.70	4,097.6	1,361.1	816.0	1,586.9	0.62	-0.62	
4,526.0	24.70	31.10	4,185.1	1,394.9	836.6	1,626.6	0.68	0.62	
4,622.0	25.10	30.00	4,272.1	1,429.7	857.2	1,667.0	0.64	0.42	
4,718.0	24.30	30.30	4,359.4	1,464.4	877.3	1,707.1	0.84	-0.83	
4,814.0	23.70	29.90	4,447.1	1,498.2	896.9	1,746.1	0.65	-0.62	
4,910.0	24.40	29.50	4,534.7	1,532.2	916.3	1,785.3	0.75	0.73	
5,006.0	25.10	31.90	4,621.9	1,566.7	936.8	1,825.4	1.28	0.73	
5,101.0	24.70	32.40	4,708.1	1,600.6	958.1	1,865.4	0.48	-0.42	
5,198.0	24.30	32.50	4,796.3	1,634.6	979.7	1,905.6	0.41	-0.41	
5,294.0	24.50	32.60	4,883.8	1,668.0	1,001.0	1,945.3	0.21	0.21	
5,390.0	24.70	32.30	4,971.1	1,701.7	1,022.5	1,985.2	0.25	0.21	
5,486.0	25.00	30.30	5,058.2	1,736.2	1,043.4	2,025.5	0.93	0.31	
5,581.0	24.30	29.70	5,144.5	1,770.5	1,063.2	2,065.2	0.78	-0.74	
5,677.0	23.20	30.30	5,232.4	1,804.0	1,082.6	2,103.8	1.17	-1.15	
5,773.0	23.30	31.40	5,320.6	1,836.5	1,102.0	2,141.7	0.46	0.10	
5,869.0	22.50	31.70	5,409.0	1,868.3	1,121.5	2,179.1	0.84	-0.83	
5,965.0	23.50	32.40	5,497.4	1,900.1	1,141.4	2,216.6	1.08	1.04	
6,060.0	23.60	35.60	5,584.5	1,931.6	1,162.7	2,254.4	1.35	0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 26-4A (I27W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7223.0ft (Nabors M15)
Site:	I27W	MD Reference:	KBE @ 7223.0ft (Nabors M15)
Well:	MCU 26-4A (I27W Pad)	North Reference:	True
Wellbore:	DD	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
6,157.0	24.50	33.30	5,673.1	1,964.2	1,185.0	2,293.9	1.34	0.93	
6,252.0	24.90	31.70	5,759.4	1,997.7	1,206.3	2,333.6	0.82	0.42	
6,348.0	26.10	30.70	5,846.0	2,033.0	1,227.7	2,374.9	1.33	1.25	
6,442.0	24.80	31.10	5,930.9	2,067.7	1,248.5	2,415.3	1.40	-1.38	
6,538.0	25.20	29.30	6,017.9	2,102.7	1,268.9	2,455.8	0.90	0.42	
6,634.0	24.60	30.90	6,105.0	2,137.7	1,289.1	2,496.3	0.94	-0.62	
6,730.0	24.00	30.20	6,192.5	2,171.7	1,309.2	2,535.8	0.69	-0.62	
6,826.0	23.00	30.90	6,280.5	2,204.7	1,328.7	2,574.0	1.08	-1.04	
6,920.0	21.10	30.30	6,367.6	2,235.1	1,346.6	2,609.3	2.04	-2.02	
7,015.0	18.60	29.50	6,457.0	2,263.0	1,362.7	2,641.6	2.65	-2.63	
7,111.0	16.30	30.30	6,548.5	2,288.0	1,377.1	2,670.4	2.41	-2.40	
7,207.0	15.60	29.90	6,640.9	2,310.8	1,390.3	2,696.7	0.74	-0.73	
7,303.0	14.10	32.10	6,733.6	2,331.9	1,403.0	2,721.3	1.67	-1.56	
7,399.0	13.00	32.40	6,827.0	2,350.9	1,415.0	2,743.8	1.15	-1.15	
7,494.0	11.70	33.20	6,919.8	2,368.0	1,426.0	2,764.1	1.38	-1.37	
7,590.0	10.60	31.00	7,014.0	2,383.7	1,435.8	2,782.7	1.23	-1.15	
7,685.0	8.30	33.70	7,107.7	2,396.9	1,444.1	2,798.3	2.46	-2.42	
7,781.0	6.40	31.60	7,202.9	2,407.2	1,450.8	2,810.5	2.00	-1.98	
7,876.0	5.20	25.60	7,297.4	2,415.6	1,455.4	2,820.1	1.41	-1.26	
7,971.0	3.10	12.80	7,392.1	2,422.0	1,457.8	2,826.8	2.40	-2.21	
8,016.6	2.33	1.36	7,437.7	2,424.1	1,458.1	2,828.8	2.06	-1.69	MCU 26-4A TGT (2)
8,066.0	1.70	338.30	7,487.0	2,425.8	1,457.9	2,830.2	2.06	-1.28	
8,161.0	1.00	252.30	7,582.0	2,426.9	1,456.6	2,830.4	2.01	-0.74	
8,256.0	0.70	218.90	7,677.0	2,426.2	1,455.4	2,829.2	0.60	-0.32	
8,352.0	0.70	196.20	7,773.0	2,425.2	1,454.9	2,828.1	0.29	0.00	
8,447.0	0.70	181.40	7,868.0	2,424.0	1,454.7	2,827.0	0.19	0.00	
8,542.0	0.60	181.90	7,963.0	2,423.0	1,454.7	2,826.0	0.11	-0.11	
8,637.0	0.50	155.00	8,058.0	2,422.1	1,454.9	2,825.4	0.29	-0.11	
8,732.0	0.60	139.70	8,153.0	2,421.3	1,455.3	2,825.0	0.19	0.11	
8,827.0	0.70	136.80	8,248.0	2,420.5	1,456.1	2,824.7	0.11	0.11	
8,923.0	1.00	124.70	8,344.0	2,419.6	1,457.2	2,824.4	0.36	0.31	
9,018.0	1.20	134.20	8,439.0	2,418.5	1,458.6	2,824.1	0.28	0.21	
9,114.0	0.60	80.40	8,534.9	2,417.8	1,459.8	2,824.2	1.02	-0.62	
9,209.0	0.90	200.50	8,629.9	2,417.2	1,460.0	2,823.8	1.38	0.32	
9,304.0	1.10	100.00	8,724.9	2,416.4	1,460.6	2,823.4	1.62	0.21	
9,400.0	0.70	83.40	8,820.9	2,416.3	1,462.1	2,824.1	0.49	-0.42	
9,495.0	1.70	72.10	8,915.9	2,416.8	1,464.0	2,825.5	1.08	1.05	
9,590.0	0.90	46.90	9,010.9	2,417.7	1,465.9	2,827.3	1.02	-0.84	
9,685.0	1.50	113.30	9,105.9	2,417.7	1,467.6	2,828.1	1.48	0.63	
9,780.0	1.80	345.80	9,200.8	2,418.7	1,468.4	2,829.4	3.12	0.32	
9,876.0	2.10	350.80	9,296.8	2,421.9	1,467.7	2,831.8	0.36	0.31	
9,971.0	1.00	344.90	9,391.7	2,424.4	1,467.2	2,833.7	1.17	-1.16	
10,066.0	0.90	265.60	9,486.7	2,425.1	1,466.3	2,833.8	1.28	-0.11	
10,161.0	1.00	299.90	9,581.7	2,425.5	1,464.8	2,833.4	0.60	0.11	
10,256.0	0.70	331.00	9,676.7	2,426.4	1,463.8	2,833.7	0.57	-0.32	
10,352.0	0.80	226.40	9,772.7	2,426.5	1,463.1	2,833.3	1.24	0.10	
10,447.0	1.20	29.90	9,867.7	2,426.9	1,463.1	2,833.7	2.08	0.42	
10,543.0	1.50	39.00	9,963.7	2,428.7	1,464.4	2,835.9	0.38	0.31	
10,638.0	1.90	43.30	10,058.6	2,430.8	1,466.2	2,838.7	0.44	0.42	
10,733.0	2.20	48.40	10,153.6	2,433.2	1,468.7	2,842.0	0.37	0.32	
10,818.0	2.30	42.90	10,238.5	2,435.5	1,471.0	2,845.2	0.28	0.12	Last Cathedral Survey @ 10,818' MD
10,867.0	2.30	42.90	10,287.5	2,437.0	1,472.4	2,847.1	0.00	0.00	MCU 26-4A PBHL
10,868.0	2.30	42.90	10,288.5	2,437.0	1,472.4	2,847.2	0.01	0.00	Projection to Bit @ 10,868' MD

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 26-4A (I27W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7223.0ft (Nabors M15)
Site:	I27W	MD Reference:	KBE @ 7223.0ft (Nabors M15)
Well:	MCU 26-4A (I27W Pad)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
MCU 26-4A TGT	0.00	358.58	7,603.5	2,426.2	1,464.7	1,586,537.50	2,365,091.75	39.422236	-107.747739
- actual wellpath misses target center by 8.5ft at 8182.4ft MD (7603.4 TVD, 2426.8 N, 1456.3 E)									
- Point									
MCU 26-4A PBHL	0.00	358.58	10,288.0	2,426.2	1,464.7	1,586,537.50	2,365,091.75	39.422236	-107.747739
- actual wellpath misses target center by 13.2ft at 10867.0ft MD (10287.5 TVD, 2437.0 N, 1472.4 E)									
- Circle (radius 25.0)									
MCU 26-4A TGT (2)	0.00	358.58	7,437.6	2,426.2	1,464.7	1,586,537.50	2,365,091.75	39.422236	-107.747739
- actual wellpath misses target center by 6.9ft at 8016.6ft MD (7437.7 TVD, 2424.1 N, 1458.1 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment	
10,818.0	10,238.5	2,435.5	1,471.0	Last Cathedral Survey @ 10,818' MD	
10,868.0	10,288.5	2,437.0	1,472.4	Projection to Bit @ 10,868' MD	

Checked By: _____ Approved By: _____ Date: _____