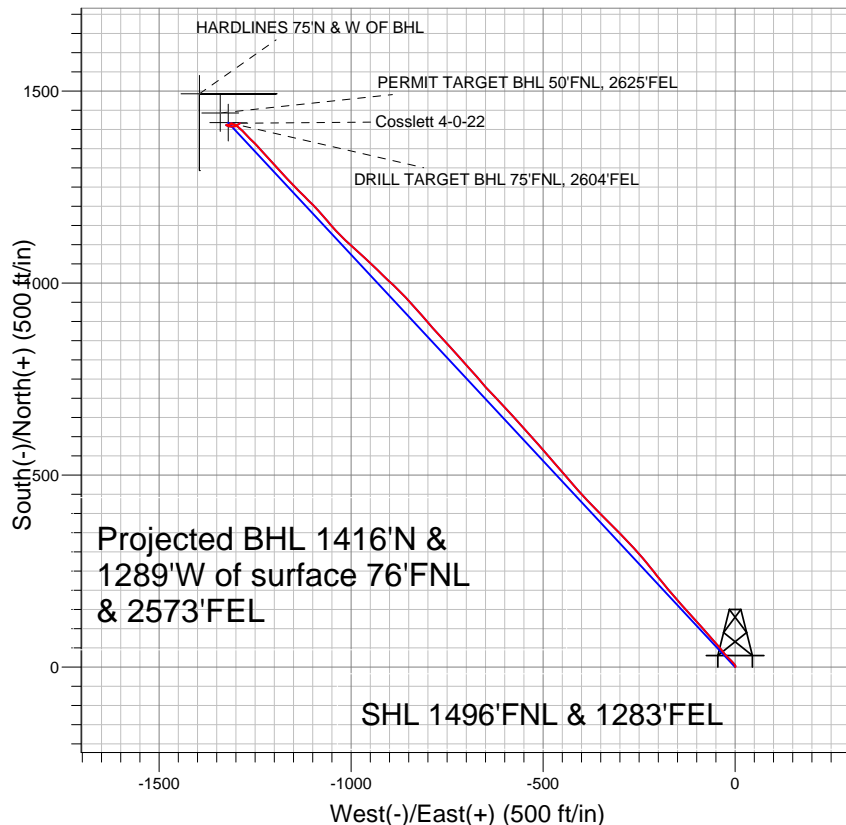


EnCana Oil & Gas Weld County CO



LEGEND

- + Cosslett 4-0-22, Wellbore #1, Plan #1 (11-28-11) R V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 8885'MD & 8534'TVD @ 1915'VS
 2.0 deg Inc 55.7 deg AZ

Project: SEC.22-T1N-R68W
 Site: Cosslett 4-0-22 Pad Sec.22-T1N-R68W
 Well: Cosslett 4-0-22
 Plan: Wellbore #1



Directional

EnCana Oil & Gas Weld County CO

SEC.22-T1N-R68W

Cosslett 4-0-22 Pad Sec.22-T1N-R68W

Cosslett 4-0-22

Wellbore #1

Survey: Survey #1

Standard Survey Report

12 December, 2011

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Cosslett 4-0-22
Project:	SEC.22-T1N-R68W	TVD Reference:	WELL @ 5198.0ft (Original Well Elev)
Site:	Cosslett 4-0-22 Pad Sec.22-T1N-R68W	MD Reference:	WELL @ 5198.0ft (Original Well Elev)
Well:	Cosslett 4-0-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.22-T1N-R68W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Cosslett 4-0-22 Pad Sec.22-T1N-R68W		
Site Position:		Northing:	1,257,775.21 ft
From:	Lat/Long	Easting:	3,144,297.62 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.039830
		Longitude:	-104.984630
		Grid Convergence:	0.33 °

Well	Cosslett 4-0-22		
Well Position	+N/-S	0.0 ft	Northing: 1,257,775.20 ft
	+E/-W	0.0 ft	Easting: 3,144,297.62 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.039830
		Longitude:	-104.984630
		Ground Level:	5,185.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/28/2011	8.91	66.71	52,881

Design	Wellbore #1				
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	317.04	

Survey Program	Date	12/12/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
138.0	8,885.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
138.0	1.10	29.80	138.0	1.1	0.7	0.4	0.80	0.80	0.00	
229.0	3.20	336.00	228.9	4.2	0.1	3.1	2.97	2.31	-59.12	
320.0	5.40	315.50	319.7	9.6	-4.0	9.7	2.91	2.42	-22.53	
411.0	7.40	315.60	410.1	16.8	-11.1	19.9	2.20	2.20	0.11	
503.0	9.30	317.70	501.1	26.6	-20.2	33.2	2.09	2.07	2.28	
594.0	11.10	320.40	590.7	38.8	-30.8	49.3	2.05	1.98	2.97	
685.0	13.40	320.70	679.6	53.7	-43.0	68.6	2.53	2.53	0.33	
777.0	15.30	317.90	768.7	70.9	-57.9	91.4	2.20	2.07	-3.04	
871.0	17.80	318.60	858.8	90.9	-75.7	118.1	2.67	2.66	0.74	
960.0	18.80	317.70	943.3	111.7	-94.4	146.1	1.17	1.12	-1.01	
1,031.0	18.20	317.40	1,010.7	128.4	-109.6	168.6	0.86	-0.85	-0.42	
1,125.0	19.10	318.10	1,099.7	150.6	-129.8	198.7	0.99	0.96	0.74	

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Cosslett 4-0-22
Project:	SEC.22-T1N-R68W	TVD Reference:	WELL @ 5198.0ft (Original Well Elev)
Site:	Cosslett 4-0-22 Pad Sec.22-T1N-R68W	MD Reference:	WELL @ 5198.0ft (Original Well Elev)
Well:	Cosslett 4-0-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,219.0	19.40	319.90	1,188.5	174.0	-150.1	229.6	0.71	0.32	1.91	
1,312.0	19.70	319.30	1,276.1	197.7	-170.3	260.7	0.39	0.32	-0.65	
1,406.0	21.30	320.00	1,364.1	222.8	-191.6	293.6	1.72	1.70	0.74	
1,499.0	23.00	322.50	1,450.3	250.1	-213.5	328.6	2.09	1.83	2.69	
1,593.0	25.00	318.50	1,536.2	279.6	-237.9	366.7	2.74	2.13	-4.26	
1,686.0	24.30	318.30	1,620.7	308.6	-263.6	405.5	0.76	-0.75	-0.22	
1,780.0	24.40	316.70	1,706.3	337.2	-289.8	444.2	0.71	0.11	-1.70	
1,873.0	24.40	314.60	1,791.0	364.6	-316.7	482.6	0.93	0.00	-2.26	
1,967.0	24.70	314.90	1,876.5	392.1	-344.4	521.7	0.35	0.32	0.32	
2,060.0	24.00	316.00	1,961.2	419.5	-371.3	560.0	0.90	-0.75	1.18	
2,154.0	22.60	317.60	2,047.6	446.5	-396.7	597.2	1.63	-1.49	1.70	
2,248.0	22.20	319.00	2,134.5	473.3	-420.6	633.0	0.71	-0.43	1.49	
2,341.0	22.10	320.00	2,220.6	499.9	-443.4	668.0	0.42	-0.11	1.08	
2,434.0	21.90	318.10	2,306.9	526.3	-466.2	702.8	0.79	-0.22	-2.04	
2,528.0	21.60	318.50	2,394.2	552.3	-489.4	737.7	0.36	-0.32	0.43	
2,621.0	21.80	319.50	2,480.6	578.2	-511.9	772.0	0.45	0.22	1.08	
2,715.0	21.70	318.80	2,567.9	604.6	-534.7	806.8	0.30	-0.11	-0.74	
2,808.0	21.50	317.70	2,654.3	630.1	-557.5	841.1	0.49	-0.22	-1.18	
2,901.0	21.10	317.40	2,741.0	655.0	-580.3	874.8	0.45	-0.43	-0.32	
2,995.0	20.70	316.70	2,828.8	679.6	-603.1	908.4	0.50	-0.43	-0.74	
3,088.0	20.80	315.80	2,915.8	703.4	-625.9	941.3	0.36	0.11	-0.97	
3,182.0	21.90	318.50	3,003.3	728.5	-649.2	975.5	1.57	1.17	2.87	
3,276.0	21.90	319.70	3,090.5	755.0	-672.1	1,010.6	0.48	0.00	1.28	
3,369.0	22.20	317.70	3,176.7	781.2	-695.2	1,045.5	0.87	0.32	-2.15	
3,463.0	21.80	318.10	3,263.9	807.3	-718.8	1,080.7	0.45	-0.43	0.43	
3,556.0	21.60	317.90	3,350.3	832.9	-741.8	1,115.0	0.23	-0.22	-0.22	
3,650.0	21.30	317.40	3,437.8	858.3	-764.9	1,149.4	0.37	-0.32	-0.53	
3,743.0	21.00	317.70	3,524.5	883.0	-787.6	1,183.0	0.34	-0.32	0.32	
3,837.0	19.50	319.50	3,612.7	907.4	-809.1	1,215.5	1.73	-1.60	1.91	
3,930.0	20.90	319.30	3,700.0	931.8	-830.0	1,247.6	1.51	1.51	-0.22	
4,023.0	22.40	317.00	3,786.4	957.4	-852.9	1,281.9	1.85	1.61	-2.47	
4,117.0	22.90	313.50	3,873.2	983.0	-878.4	1,318.0	1.53	0.53	-3.72	
4,210.0	23.60	313.70	3,958.6	1,008.4	-905.0	1,354.7	0.76	0.75	0.22	
4,304.0	22.60	315.30	4,045.1	1,034.2	-931.3	1,391.5	1.26	-1.06	1.70	
4,397.0	23.40	311.20	4,130.7	1,059.1	-957.8	1,427.8	1.92	0.86	-4.41	
4,491.0	24.40	312.80	4,216.7	1,084.6	-986.1	1,465.7	1.27	1.06	1.70	
4,584.0	22.60	312.60	4,301.9	1,109.7	-1,013.3	1,502.7	1.94	-1.94	-0.22	
4,677.0	22.60	318.60	4,387.8	1,135.2	-1,038.3	1,538.4	2.48	0.00	6.45	
4,770.0	22.20	318.60	4,473.8	1,161.8	-1,061.7	1,573.8	0.43	-0.43	0.00	
4,864.0	23.70	318.10	4,560.3	1,189.2	-1,086.1	1,610.4	1.61	1.60	-0.53	
4,957.0	24.10	314.10	4,645.4	1,216.3	-1,112.2	1,648.1	1.79	0.43	-4.30	
5,051.0	21.50	315.50	4,732.0	1,241.9	-1,138.1	1,684.5	2.83	-2.77	1.49	
5,144.0	20.60	317.00	4,818.8	1,266.1	-1,161.2	1,717.9	1.13	-0.97	1.61	
5,238.0	19.80	316.70	4,907.0	1,289.7	-1,183.4	1,750.3	0.86	-0.85	-0.32	
5,331.0	18.00	318.10	4,995.0	1,311.9	-1,203.8	1,780.4	2.00	-1.94	1.51	
5,425.0	15.70	318.30	5,085.0	1,332.2	-1,221.9	1,807.7	2.45	-2.45	0.21	
5,518.0	12.90	317.60	5,175.1	1,349.3	-1,237.3	1,830.6	3.02	-3.01	-0.75	
5,612.0	11.30	315.10	5,267.0	1,363.6	-1,250.9	1,850.3	1.79	-1.70	-2.66	
5,706.0	9.70	315.10	5,359.4	1,375.7	-1,263.0	1,867.5	1.70	-1.70	0.00	
5,799.0	8.80	315.80	5,451.2	1,386.3	-1,273.5	1,882.4	0.98	-0.97	0.75	
5,893.0	6.80	316.30	5,544.3	1,395.5	-1,282.3	1,895.2	2.13	-2.13	0.53	
5,986.0	5.70	310.40	5,636.8	1,402.5	-1,289.6	1,905.3	1.37	-1.18	-6.34	
6,080.0	4.80	307.60	5,730.4	1,407.9	-1,296.3	1,913.8	1.00	-0.96	-2.98	
6,173.0	3.30	301.20	5,823.2	1,411.7	-1,301.7	1,920.2	1.68	-1.61	-6.88	

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Site:	Cosslett 4-0-22 Pad Sec.22-T1N-R68W	MD Reference:	WELL @ 5198.0ft (Original Well Elev)
Well:	Cosslett 4-0-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,252.1	2.36	288.86	5,902.1	1,413.4	-1,305.2	1,923.8	1.41	-1.19	-15.60
PERMIT TARGET BHL 50'FNL, 2625'FEL									
6,267.0	2.20	285.40	5,917.0	1,413.6	-1,305.7	1,924.3	1.41	-1.07	-23.23
6,350.3	1.17	251.79	6,000.3	1,413.7	-1,308.1	1,926.0	1.66	-1.24	-40.34
DRILL TARGET BHL 75'FNL, 2604'FEL									
6,360.0	1.10	244.40	6,010.0	1,413.6	-1,308.3	1,926.1	1.66	-0.70	-76.34
6,454.0	0.10	263.80	6,104.0	1,413.2	-1,309.2	1,926.4	1.07	-1.06	20.64
6,548.0	0.80	300.30	6,198.0	1,413.6	-1,309.8	1,927.1	0.77	0.74	38.83
6,641.0	1.30	299.80	6,291.0	1,414.4	-1,311.3	1,928.7	0.54	0.54	-0.54
6,735.0	0.90	295.10	6,385.0	1,415.3	-1,312.9	1,930.4	0.44	-0.43	-5.00
6,829.0	1.10	73.20	6,479.0	1,415.8	-1,312.7	1,930.7	1.99	0.21	146.92
6,923.0	0.70	81.30	6,572.9	1,416.2	-1,311.2	1,930.0	0.45	-0.43	8.62
7,016.0	0.40	130.20	6,665.9	1,416.1	-1,310.4	1,929.4	0.57	-0.32	52.58
7,110.0	0.50	206.70	6,759.9	1,415.5	-1,310.4	1,928.9	0.60	0.11	81.38
7,203.0	0.70	250.10	6,852.9	1,414.9	-1,311.1	1,929.0	0.52	0.22	46.67
7,296.0	1.10	253.40	6,945.9	1,414.5	-1,312.5	1,929.6	0.43	0.43	3.55
7,390.0	1.50	255.70	7,039.9	1,413.9	-1,314.5	1,930.6	0.43	0.43	2.45
7,483.0	1.10	237.20	7,132.9	1,413.1	-1,316.5	1,931.3	0.62	-0.43	-19.89
7,577.0	1.50	235.30	7,226.8	1,411.9	-1,318.2	1,931.7	0.43	0.43	-2.02
7,671.0	2.60	284.90	7,320.8	1,411.8	-1,321.3	1,933.6	2.12	1.17	52.77
7,765.0	1.90	256.80	7,414.7	1,412.0	-1,324.9	1,936.2	1.37	-0.74	-29.89
7,858.0	2.80	116.10	7,507.7	1,410.6	-1,324.3	1,934.9	4.77	0.97	-151.29
7,951.0	3.00	108.40	7,600.6	1,408.9	-1,320.0	1,930.6	0.47	0.22	-8.28
8,045.0	2.50	101.90	7,694.5	1,407.7	-1,315.7	1,926.8	0.63	-0.53	-6.91
8,138.0	2.10	96.30	7,787.4	1,407.1	-1,312.0	1,923.8	0.49	-0.43	-6.02
8,232.0	2.00	82.90	7,881.3	1,407.1	-1,308.6	1,921.6	0.52	-0.11	-14.26
8,326.0	2.10	78.30	7,975.3	1,407.6	-1,305.3	1,919.7	0.20	0.11	-4.89
8,419.0	1.90	72.50	8,068.2	1,408.4	-1,302.2	1,918.2	0.31	-0.22	-6.24
8,513.0	1.80	60.10	8,162.2	1,409.6	-1,299.4	1,917.2	0.44	-0.11	-13.19
8,606.0	1.80	55.10	8,255.1	1,411.2	-1,297.0	1,916.6	0.17	0.00	-5.38
8,686.0	1.80	53.70	8,335.1	1,412.7	-1,294.9	1,916.3	0.05	0.00	-1.75
8,779.0	1.90	56.00	8,428.0	1,414.4	-1,292.5	1,915.9	0.13	0.11	2.47
8,839.0	2.00	55.70	8,488.0	1,415.5	-1,290.8	1,915.6	0.17	0.17	-0.50
8,865.5	2.00	55.70	8,514.5	1,416.1	-1,290.0	1,915.4	0.00	0.00	0.00
HARDLINES 75'N & W OF BHL									
8,885.0	2.00	55.70	8,534.0	1,416.4	-1,289.4	1,915.3	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____