City of Charlottesville

2016 Annual Water Quality Report Data

Contaminants Detected	MCLG	MCL	City Water Result	# of Samples > AL	Range of Detections	Violation?	Typical Source of Contaminant
Primary Standards- Potential Health Risks							
Microbiological Compounds							
Total Coliform Bacteria[1]	0	Presence of coliform in 5% of samples per month	2%[2] (05/2015)	n/a	0—2% per month	No[2]	Naturally present in the environment
Fecal Coliform Bacteria (as E. coli)[1]	0	[3] See footnote	1+[2] (05/2015)	n/a	0—1+ per month	No[2]	Human and animal fecal waste
Turbidity (maximum single value)	n/a	1.0[4]	0.82 NTU	n/a	n/a	No	Soil runoff
Turbidity (% of monthly samples below 0.3 NTU)	n/a	95%	99.97%	n/a	99.97%—100%	No	Soil runoff
Radioactive Contaminates							
Combined Radium[5]	0 pCi/l	5 pCi/l	0.6 pCi/l	n/a	ND—0.6 pCi/l	No	Erosion of natural deposits
Gross Alpha[5]	0 pCi/l	15 pCi/l	0.4 pCi/l	n/a	ND—0.4 pCi/l	No	Decay of natural deposits
Gross Beta[5,6]	0 pCi/l	50 pCi/l	4.4 pCi/l	n/a	3.1—4.4 pCi/l	No	Erosion of natural deposits
Inorganic Compounds							
Copper[7]	1.3 ppm	1.3 ppm (AL)	0.83 ppm[8]	0	n/a	No	Corrosion of household plumbing systems, erosion of natural deposits
Lead[7]	0 ppb	15 ppb (AL)	1.2 ppb[8]	0	n/a	No	Corrosion of household plumbing systems, erosion of natural deposits
Fluoride	4 ppm	4 ppm	0.74 ppm	n/a	0.6—0.93 ppm	No	Water additive that promotes strong teeth
Barium	2 ppm	2 ppm	0.016 ppm	n/a	0.012—0.016 ppm	No	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate	10 ppm	10 ppm	0.22 ppm	n/a	0.1—0.22 ppm	No	Runoff from fertilizer use, leaching from septic tanks, sewage
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs)	n/a	80 ppb	40 ppb[9]	n/a	11—60 ppb	No	Byproduct from disinfection
Haloacetic Acid (HAAs)	n/a	60 ppb	42 ppb[9]	n/a	15—57 ppb	No	Byproduct from disinfection
Free Residual Chlorine	MRDL = 4 ppm	MRDLG = 4 ppm	1.14 ppm	n/a	0.01—2.04 ppm	No	Water additive to control microbes (disinfectant)
Secondary Standards- Aesthetic Factors							
Chloride	n/a	250 ppm	8.3—13.5 ppm	-	-	No	Runoff/leaching of natural deposits
Iron	n/a	0.3 ppm	<0.05 ppm	-	-	No	Runoff/leaching of natural deposits
Manganese	n/a	0.05 ppm	<0.01 ppm	-	-	No	Runoff/leaching of natural deposits
pH	n/a	6.5—8.5	7.2—7.5 (monthly averages)	-	-	No	Runoff/leaching of natural deposits
Sulfate	n/a	250 ppm	<5.0—26.7 ppm	-	-	No	Runoff/leaching of natural deposits
Total Dissolved Solids	n/a	500 ppm	61—80 ppm	-	-	No	Runoff/leaching of natural deposits
Other Parameters of Interest							
Alkalinity	n/a	n/a	18.5—22.1 ppm	-	-	n/a	Runoff/leaching of limestone minerals from soil and rock
Conductivity	n/a	n/a	114—144 µmhos/cm	-	-	n/a	Runoff/leaching of natural deposits
Hardness	n/a	n/a	23—44 ppm	-	-	n/a	Runoff/leaching of limestone minerals from soil and rock
Sodium	n/a	n/a	5.63—5.88 ppm	-	-	n/a	Runoff/leaching of natural deposits

[1] Unit of measurement for total coliform bacteria and E. coli is the presence or absence of bacteria in a 100 ml sample.

[2] One routine sample taken in May 4th, 2015 (out of a total 50 monthly samples for the City) was positive for Total Coliform bacteria and E. Coli bacteria. The sample was immediately resampled, along with a check sample from within 5 service connections upstream and downstream of the initial sample site (3 samples total). All resamples and upstream/downstream samples came back negative for Total Coliform and E. coli bacteria, indicating the most likely reason for these positive results was laboratory or sampling error. This does not constitute a violation of the MCL.

[3] E. coli MCL: A routine sample and a repeat sample are total coliform positive, and at least one is also E. coli positive.

[4] The MCL for turbidity is for no single measurement to exceed 1.0 NTU, and for 95% of all measurements to be below 0.3 NTU.

[5] Last Sampled in 2011, and sampling not required annually.

[6] EPA considers 50 pCi/l to be the level of concern for beta particles.

[7] Last sampled in August 2013 from select residences, and sampling not required annually. Next sampling will occur summer 2016.

[8] The value reported is the 90th percentile of all data (30 samples) collected.

[9] TTHM and HAA results are averaged over four quarters to determine compliance with the MCL; as part of the compliance extension from Stage 2 DBP Rule for 2015; however, this extension has expired effective the 3rd quarter of 2015.

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