

# ENGLEWOOD CITY OF 2017 Drinking Water Quality Report For Calendar Year 2016

*Public Water System ID:* CO0103045

**Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.**

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact JASON CLARK, Water Production Supt. at 303-762-2650 with any questions about the Drinking Water Consumer Confidence Rule (CCR) or for public participation opportunities that may affect the water quality. The Federal EPA requires this CCR be published annually for every public water system.

## **General Information**

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting <http://water.epa.gov/drink/contaminets>

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants:** salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides:** may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.
- Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

## **HEALTH INFORMATION ABOUT WATER QUALITY**

### **Lead in Drinking Water**

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. [Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline \(1-800-426-4791\) or at <http://www.epa.gov/safewater/lead>.](#)

### **Cryptosporidium**

Is a microbial pathogen found in surface water throughout the United States. Although filtration removes *cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms (4.0 oocysts/L) in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to

consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

**Source Water Assessment and Protection (SWAP)**

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit <http://wqcdcompliance.com/ccr>. The report is located under “Source Water Assessment Reports”, and then “Assessment Report by County”. Select ARAPAHOE County and find 103045; ENGLEWOOD CITY OF or by contacting JASON CLARK at 303-762-2650. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that could occur. It does not mean that the contamination has or will occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed on the next page.

Please contact Jason Clark at 303-762-2650 to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Consumer Confidence Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued customers, to be informed about the services we provide and the quality water we deliver to you every day.

**Englewood Water Sources**

<u>Source</u>	<u>Source Type</u>	<u>Water Type</u>	<u>Potential Source(s) of Contamination</u>
MCLELLAN RESERVOIR	INTAKE	SURFACE WATER	Street runoff, Septic systems, Industrial waste, Animal feces
SOUTH PLATTE	INTAKE	SURFACE WATER	Street runoff, Septic systems, Industrial waste, Animal feces
CITY DITCH	INTAKE	SURFACE WATER	Street runoff, Septic systems, Industrial waste, Animal feces
MCBROOM DITCH BEAR CREEK	INTAKE	SURFACE WATER	Street runoff, Septic systems, Industrial waste, Animal feces

**Terms and Abbreviations**

- **Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water.
- **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- **Health-Based** – A violation of either a MCL or TT
- **Non-Health-Based** – A violation that is not a MCL or TT
- **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number, or severity of violations) to bring a non-compliant water system back into compliance.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.

- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Picocuries per liter (pCi/L)** – Measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
- **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are 90% Percentile Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Average (x-bar)** – Typical value.
- **Range (R)** – Lowest value to the highest value.
- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = ug/L)** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Not Applicable (N/A)** – Does not apply or not available.
- **Max Res** = Maximum Residential time in distribution system (furthest from the treatment plant)
- **EPTDS** = Entry Point to Distribution System.
- **Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

### Detected Contaminants

CITY OF ENGLEWOOD routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2016 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

**Note:** Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

<b>Disinfectant Sampled in the Distribution System</b>						
<b>TT Requirement:</b> At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <b>OR</b> IF sample size is less than 40 no more than 1 sample is below 0.2 ppm						
<b>Typical Sources:</b> Water additive used to control microbes						
Contaminant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chlorine	December 2016	Lowest period percentage of samples meeting TT requirement: 100%	0	51	No	4.0 ppm

**Microorganism Contaminants Sampled in the Distribution System**

Contaminant Name	Time Period	Results	Sample Size	MCL	MCLG	MCL Violation	Typical Sources
Coliform (TCR)	September 2016	4.23 % Positive Samples	71	No more than 5.0% positive samples per period (If sample size is greater than or equal to 40) <b>OR</b> No more than 1 positive sample per period (If sample size is less than 40)	0	No	Naturally present in the environment

**Lead and Copper Sampled in the Distribution System**

Contaminant Name	Time Period	90 <sup>th</sup> Percentile	Sample Size	Unit of Measure	90 <sup>th</sup> Percentile AL	Sample Sites Above AL	90 <sup>th</sup> Percentile AL Exceedance	Typical Sources
Copper	07/22/2014 to 08/05/2014	0.08	30	ppm	1.3		No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	07/22/2014 to 08/05/2014	2.1	30	ppb	15		No	Corrosion of household plumbing systems; Erosion of natural deposits

**Disinfection Byproducts Sampled in the Distribution System**

Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	Highest Compliance Value	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2016	11.28	2.2 to 20.5	52	ppb	60	N/A		No	Byproduct of drinking water disinfection
Total Trihalome thanes (TTHM)	2016	41.52	2.5 to 57	52	ppb	80	N/A		No	Byproduct of drinking water disinfection

Total Organic Carbon (Disinfection Byproducts Precursor) Removal Ratio of Raw and Finished Water								
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	TT Minimum Ratio	TT Violation	Typical Sources
Total Organic Carbon Ratio	2016	1.53	0.97 to 2.36	12	Ratio	1.00	No	Naturally present in the environment
*If minimum ratio not met and no violation identified then the system achieved compliance using alternative criteria.								

Disinfectants Sampled at the Entry Point to the Distribution System						
Contaminant Name	Year	Number of Samples Above or Below Level	Samples Size	TT/MRDL Requirement	TT/MRDL Violation	Typical Sources
Chlorine/Chloramine	2016	0	2193	TT = No more than 4 hours with a sample below 0.2 MG/L	No	Water additive used to control microbes

Summary of Turbidity Sampled at the Entry Point to the Distribution System					
Contaminant Name	Sample Date	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	Date/Month: November	<u>Highest single</u> measurement: 0.09 NTU	Maximum 1 NTU for any single measurement	No	Soil Runoff
Turbidity	Month: December	<u>Lowest monthly</u> percentage of samples meeting TT requirement for our technology: 100 %	In any month, at least 95% of samples must be less than 0.3 NTU	No	Soil Runoff

Radionuclides Sampled at the Entry Point to the Distribution System									
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Combined Radium	2012	0.1	0.1 to 0.1	1	pCi/L	5	0	No	Erosion of natural deposits
Combined Uranium	2012	6.3	6.3 to 6.3	1	ppb	30	0	No	Erosion of natural deposits

**Inorganic Contaminants Sampled at the Entry Point to the Distribution System**

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Barium	2016	0.07	0.07 to 0.07	1	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	2016	0.62	0.62 to 0.62	1	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	2016	1.8	1.8 to 1.8	1	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	2016	4	4 to 4	1	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

**Secondary Contaminants\*\***

\*\*Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	Secondary Standard
Total Dissolved Solids	2012	450	450 to 450	1	ppm	500
Sodium	2016	67.3	67.3 to 67.3	1	ppm	N/A

**Unregulated Contaminants\*\*\***

EPA has implemented the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants that are suspected to be present in drinking water and do not have health based standards set under the Safe Drinking Water Act. EPA uses the results of UCMR monitoring to learn about the occurrence of unregulated contaminants in drinking water and to decide whether or not these contaminants will be regulated in the future. We performed monitoring and reported the analytical results of the monitoring to EPA in accordance with its Third Unregulated Contaminant Monitoring Rule (URCR3). Once EPA reviews the submitted results, the results are made available in the EPA's National Contaminant Occurrence Database (NCOD) (<https://www.epa.gov/dwucmr/national-contaminant-occurrence-database-ncod>). Consumers can review UCMR results by accessing the NCOD. Contaminants that were detected during our UCMR3 sampling and the corresponding analytical results are provided below.

Contaminant Name Max Res	Year	Average	Range Low - High	Sample Size	Unit of Measure
Chromium (Total)	2015	.22	<0.2 to .28	4	ug/l
Cobalt	2015	<1	<1 to <1	4	ug/l
Molybdenum	2015	2.68	2.5 to 2.9	4	ug/l
Strontium	2015	450	300 to 580	4	ug/l
Vanadium	2015	.55	.36 to .81	4	ug/l
Chromium – 6	2015	.051	<0.03 to .096	4	ug/l
Chlorate	2015	207.5	170 to 240	4	ug/l

**Unregulated Contaminants\*\*\***

EPA has implemented the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants that are suspected to be present in drinking water and do not have health based standards set under the Safe Drinking Water Act. EPA uses the results of UCMR monitoring to learn about the occurrence of unregulated contaminants in drinking water and to decide whether or not these contaminants will be regulated in the future. We performed monitoring and reported the analytical results of the monitoring to EPA in accordance with its Third Unregulated Contaminant Monitoring Rule (URCR3). Once EPA reviews the submitted results, the results are made available in the EPA's National Contaminant Occurrence Database (NCOD) (<https://www.epa.gov/dwucmr/national-contaminant-occurrence-database-ncod>). Consumers can review UCMR results by accessing the NCOD. Contaminants that were detected during our UCMR3 sampling and the corresponding analytical results are provided below.

Contaminant Name EPTDS from Allen WTP	Year	Average	Range Low - High	Sample Size	Unit of Measure
Chromium (Total)	2015	.225	<0.2 to .3	4	ug/l
Cobalt	2015	<1	<1 to <1	4	ug/l
Molybdenum	2015	2.65	2.5 to 2.8	4	ug/l
Strontium	2015	450	290 to 620	4	ug/l
Vanadium	2015	.53	.23 to .85	4	ug/l
Chromium-6	2015	.06	<0.03 to .15	4	ug/l
Chlorate	2015	217.5	170 to 240	4	ug/l
1,4 – Dioxane	2015	.073	<0.07 to .082	4	ug/l

1,1 Dichloroethane	2015	<0.03	<0.03 to <0.03	4	ug/l
1,2,3 - Trichloropropane	2015	<0.03	<0.03 to <0.03	4	ug/l
1,3 – Butadiene	2015	<0.01	<0.01 to <0.01	4	ug/l
Bromochloromethane	2015	.07	<0.06 to .1	4	ug/l
Bromomethane	2015	<0.02	<0.02 to <0.02	4	ug/l
Chlorodifluoromethane	2015	<0.08	<0.08 to <0.08	4	ug/l
Chloromethane	2015	<0.02	<0.02 to <0.02	4	ug/l
PFBS	2015	<0.09	<0.09 to 0.09	4	ug/l
PHHpA	2015	<0.01	<0.01 to 0.01	4	ug/l
PFHxS	2015	<0.03	<0.03 to 0.03	4	ug/l
PFNA	2015	<0.02	<0.02 to <0.02	4	ug/l
PFOA	2015	<0.02	<0.02 to <0.02	4	ug/l
PFOS	2015	<0.04	<0.04 to <0.04	4	ug/l

<b>Cryptosporidium and Raw Source Water E. coli</b>			
<b>Contaminant Name</b>	<b>Year</b>	<b>Number of Positives</b>	<b>Sample Size</b>
Cryptosporidium	2016	4	9
E. Coli	2016	12	12

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of disease. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

**Violations, Significant Deficiencies, Backflow/Cross-Connection and Formal Enforcement Action**

**No violations or Formal Enforcement Actions**