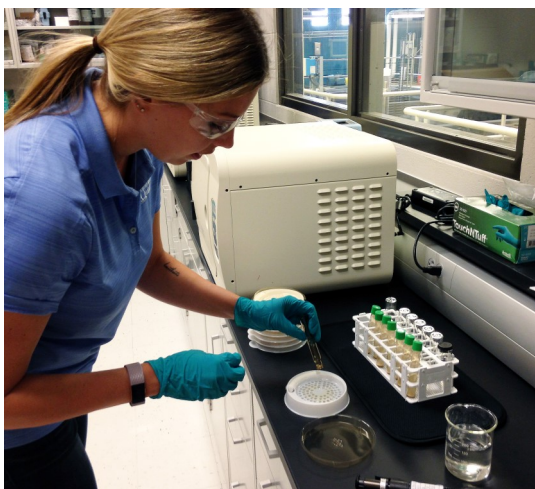


2020 Water Quality Report



Copies of this report can be found at CRgov.com/waterquality

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



The purpose of this report

Castle Rock Water's goal is to provide our customers with a safe and reliable supply of drinking water. The Water Quality Report or "Consumer Confidence Reports" are produced annually to describe the overall quality of water from its raw collection and storage to the treated purity at your tap. This report is required by the Environmental Protection Agency to summarize information regarding the water sources used, any detected contaminants, compliance and educational information.

Please contact Castle Rock Water at 720-733-6000 or email waterquality@CRgov.com with any questions about the quality or treatment of our water.

General Information About Drinking Water

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 epa.gov/ground-water-and-drinking-water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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.

Our Water Sources and Water Treatment Plants

In 2019, approximately 71 percent of the Town's water was pumped from the Town's 57 deep groundwater wells. The remaining 29 percent came from renewable water resources which included 13 shallow alluvial wells, a surface water diversion along East Plum Creek and imported WISE water. Castle Rock overlies the Denver Basin, a geologic formation with four principal aquifers: the Dawson, Denver, Arapahoe, and the deepest of the four, the Laramie-Fox Hills.

Castle Rock utilizes five treatment plants to purify and distribute potable water. Having five facilities provides redundancy to ensure reliable service. During the winter with low demand, several plants may not be in use.



SOURCE		WATER TYPE	WATER PLANT
Well CR117 CS1A	Well	GW	RWRWTF
Well CRS-227	Well	GW	FWTP
Well CR-228	Well	GW	PCWPF
Well CR-226	Well	GW	FWTP
Well 28R Meadows A-2R	Well	GW	MWTP
Well CR217	Well	GW	RWRWTF
Well CR218	Well	GW	RWRWTF
Well 15R	Well	GW	PSMWTP
Well 16R	Well	GW	PSMWTP
Well CR72R Castle Oaks 6 Arapahoe	Well	GW	RWWTF
Well CR83	Well	GW	MWTP
Well CR86	Well	GW	MWTP
Well CR51A Meadows D-7A	Well	GW	RWRWTF
Well 219 A13	Well	GW	MWTP
Well 148 Den4	Well	GW	MWTP
Well 168 LDA4	Well	GW	MWTP
Well 191 (AL-8)	Well	GW UDI Surface	PCWPF
Well CR14R PC Miller East	Well	GW	PSMWTP
Well 31R	Well	GW	RWRWTF
Well 33R Enderud	Well	GW	RWRWTF
Well 41 Weaver 1	Well	GW	FWTP
Well 82 A4	Well	GW	MWTP
Well 111	Well	GW	RWRWTF
Well 124	Well	GW	RWRWTF
Well 170 Meadows DA6	Well	GW	MWTP
Well 174 Meadows D6	Well	GW	MWTP
Well 204	Well	GW	PCWPF
Well CR-229	Well	GW	PCWPF

SOURCE		WATER TYPE	WATER PLANT
Plum Creek Diversion No. 1	Intake	Surface	PCWPF
Well CR 199—AL 16	Well	GW UDI Surface	PCWPF
Well 50R	Well	GW	MWTP
Well CR220	Well	GW	MWTP
Purchase Castle Pines Metro CO0118005	CC	GW	DIST
Well CR 201-AL 18	Well	GW UDI Surface	PCWPF
Well CR 203-AL 20	Well	GW UDI Surface	PCWPF
WISE Purchase from Parker WSD	CC	Surface	RWRWTF
Well CR221	Well	GW	MWTP
Well CR101 CSID	Well	GW	RWRWTF
Well CR222	Well	GW	MWTP
Well CR223	Well	GW	RWRWTF
Well CR224	Well	GW	RWRWTF
Well CR225	Well	GW	RWRWTF
Well CR118	Well	GW	RWRWTF
Well CR105	Well	GW	RWRWTF
Well CR123	Well	GW	RWRWTF
Well CR110	Well	GW	RWRWTF
Well 11R	Well	GW UDI Surface	PCWPF
Well 13R	Well	GW UDI Surface	PCWPF
Well 184 (AL-1)	Well	GW UDI Surface	PCWPF
Well 185 (AL-2)	Well	GW UDI Surface	PCWPF
Well 192 (AL-9)	Well	GW UDI Surface	PCWPF
Well CR72R Castle Oaks 6 Denver	Well	GW	MWTP
Well CR84 Meadows A7 Denver	Well	GW	MWTP
Well CR101 CSID	Well	GW	RWRWTF
Well CR222	Well	GW	MWTP
Well CR223	Well	GW	RWRWTF
Well CR224	Well	GW	RWRWTF

Our Water Sources and Water Treatment Plants continued

SOURCE		WATER TYPE	WATER PLANT
Well CR225	Well	GW	RWRWTF
Well CR118	Well	GW	RWRWTF
Well CR105	Well	GW	RWRWTF
Well CR123	Well	GW	RWRWTF
Well CR110	Well	GW	RWRWTF
Well 11R	Well	GW UDI Surface	PCWPF
Well 13R	Well	GW UDI Surface	PCWPF
Well 184 (AL-1)	Well	GW UDI Surface	PCWPF
Well 185 (AL-2)	Well	GW UDI Surface	PCWPF
Well 192 (AL-9)	Well	GW UDI Surface	PCWPF
Well CR72R Castle Oaks 6 Denver	Well	GW	MWTP
Well CR84 Meadows A7 Denver	Well	GW	MWTP
Well CR152 Meadows A7 Dawson	Well	GW	MWTP
Well 12R Redrilled	Well	GW UDI Surface	PCWPF
Purchased The Pinery WSD CO0118025	CC	GW	DIST
Well CR-230	Well	GW	PCWPF
Well CR21 Mikelson Den1	Well	GW	FWTP
Well 22 Mikelson DA1	Well	GW	FWTP
Well CR20 Mikelson A1	Well	GW	FWTP
Well CR27 out of service	Well	GW	
Well 43 Weaver A2	Well	GW	FWTP
Well 44 Weaver LDA2	Well	GW	FWTP
Well 45 Weaver D2	Well	GW	FWTP
Well CR47 Meadows D1	Well	GW	MWTP
Well 49 Meadows A8	Well	GW	MWTP
Well 78 PC Alluvium	Well	GW UDI Surface	PCWPF
Well 79 PC Alluvium	Well	GW UDI Surface	PCWPF
Well 80 PC Alluvium	Well	GW UDI Surface	PCWPF
Well 39 Weaver 1	Well	GW	FWTP
Well 149 Meadows D3	Well	GW	MWTP
Well 150 Meadows D2	Well	GW	MWTP
Well CR67 Meadows A7 Arapahoe	Well	GW	MWTP

GW — Groundwater
 GW UDI — Groundwater under direct influence of surface water
 CC — Consecutive Connection
 DIST — Distribution System

Water sources and types of water are important to help Castle Rock Water determine the appropriate level of treatment and design the correct type of treatment plant.

Plants treating surface water using flocculation, coagulation, sedimentation, greensand filtration, membrane filtration and disinfection

- Plum Creek Water Purification Facility (PCWPF)

Plants treating groundwater using greensand filtration and disinfection

- Founders Water Treatment Plant (FWTP)
- Meadows Water Treatment Plant (MWTP)
- P.S. Miller Water Treatment Plant (PSMWTP)
- Ray Waterman Regional Water Treatment Facility (RWRWTF)

Possible sources of contamination

Aboveground, Underground and Leaking Storage Tank Sites, Commercial/Industrial/Transportation, High Intensity Residential, Low Intensity Residential, Urban Recreational Grasses, Small Grains, Pasture / Hay, Deciduous Forest, Evergreen Forest, Septic Systems, Road Miles.



Source Water Assessment and Protection (SWAP)

The Colorado Department of Public Health and Environment (CDPHE) has provided Castle Rock Water with a Source Water Assessment Report for the Town's water supply. Through this Assessment Report, the total susceptibility of the Town's water sources to potential contamination from both discrete and dispersed contaminant sources was determined.

The Source Water Assessment provides a screening-level evaluation of potential contamination that could occur. It does not mean that the contamination has or will occur. Castle Rock Water can use this information to evaluate the need to improve current water treatment capabilities and prepare for future contamination threats. This can help ensure that quality finished water is delivered to every home. In addition, the source water assessment results provided a starting point for developing a source water protection plan.

In March 2018, Castle Rock Town Council approved a Source Water Protection Plan to help mitigate risks associated with these potential contaminants. The plan is designed to create awareness of the community's drinking water sources and the potential risks to surface water and/or groundwater quality within the watershed; encourage

education and voluntary solutions to alleviate pollution risks; promote management practices to protect and enhance the drinking water supply; and provide for a comprehensive action plan in case of an emergency that threatens or disrupts the community water supply. To view the plan, visit CRgov.com/waterplans. Potential sources of contamination in our source water area are listed on pages 30-33 in that plan.

For general information or to obtain a copy of the Source Water Assessment, visit <https://www.colorado.gov/cdphe/ccr>. The report is located under "Guidance - Source Water Assessment Reports." Search the table using 118010 - Castle Rock, Town Of. Copies of the report are also available by contacting Water Operations at 720-733-6000.

Please contact Castle Rock Water to learn more about what you can do to help protect drinking water

sources, to ask any questions about the Drinking Water Consumer Confidence Report, to learn more about the water 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.



Recognized for Excellence

Pursuing Excellence - Gold 2019

Castle Rock Water was the first water provider in the state to earn the highest ranking by the Colorado Department of Public Health and Environment for actions taken for going above and beyond regulatory compliance.



Environmental Leadership Program - Gold 2019

Awarded by the Colorado Department of Public Health and Environment to companies voluntarily going beyond compliance with state and federal regulations, increasing sustainability and commitment to continual environmental improvement. Our sustainability efforts and Environmental Policy identify our focus toward environmental stewardship and sustainability.

Devoted to Water Quality

Water quality is the core of our service. Last year, we collected more than 1800 samples and conducted tests daily, monthly, quarterly and annually within our treatment plants, at points throughout the distribution systems and at service locations. These tests are not only for compliance for local, state and federal regulations, but show our commitment to ensuring our systems, processes and upgrades continue to provide water to our community that is as clean and safe as possible. Castle Rock Water takes pride in being presented with awards such as the Pursuing Excellence and Commitment Award awarded by the Colorado Department of Public Health & Environment, our regulatory agency, for going above and beyond compliance measures. Our service is for our community and we welcome questions from our customers about the Drinking Water Confidence Rule or for public participation opportunities affecting water quality.

Detected Contaminants

Castle Rock Water routinely monitors for contaminants in your drinking water according to Federal and State laws. The following tables show all detections found in the period of January 1 to December 31, 2019 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.

Disinfectants Sampled in the Distribution System						
TT Requirement: At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <u>OR</u> If sample size is less than 40 no more than 1 sample is below 0.2 ppm Typical Sources: Water additive used to control microbes						
Disinfectant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chloramine	December, 2019	<u>Lowest period</u> percentage of samples meeting TT requirement: 100%	0	90	No	4.0 ppm

Disinfection Byproducts Sampled in the Distribution System									
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL*	MCLG	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2019	2.07	0 to 8.7	32	ppb	60	N/A	No	Byproduct of drinking water disinfection
Total Trihalo-methanes (TTHM)	2019	5.78	0.7 to 26.1	32	ppb	80	N/A	No	Byproduct of drinking water disinfection
*MCL = Maximum Contaminant Level									

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: Sep	<u>Highest single</u> measurement: 0.02 NTU	Maximum 0.5 NTU for any single measurement	No	Soil Runoff
Turbidity	Month: Dec	<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 0.1 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
Gross Alpha	2019	4.36	2.4 to 7.4	6	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2019	3.7	2.4 to 4.6	6	pCi/L	5	0	No	Erosion of natural deposits
Combined Uranium	2019	0.5	0 to 2	6	ppb	30	0	No	Erosion of natural deposits
Gross Beta Particle Activity	2016	N/A	<MRL*	1	pCi/L**	50	0	No	Decay of natural and man-made deposits
<p>*MRL (Minimum Reporting Limit) - the smallest measured concentration of a substance that can be reliably measured by using a given analytical method, which was 4pCi/L in 2016</p> <p>**The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L EPA considers 50 pCi/L to be the level of concern for Gross Beta Particle Activity.</p>									

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	2019	0.14	0.09 to 0.19	6	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	2019	1.5	0 to 2	6	ppb	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	2019	0.82	0.71 to 1.06	6	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	2019	0.13	0 to 0.3	9	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	2019	2.17	0 to 5	6	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

2019 Sampling Conducted at the Entry Point of the Distribution System					
Parameter Name (unit of measure)	Year	Average	Range Low-High	Sample Size	Secondary Standard
Alkalinity (ppm as CaCO ₃)	2019	103	88 to 115	15	N/A
Chloride (ppm)	2019	59.5	13 to 155	15	250
Hardness (ppm as CaCO ₃)	2019	165	80 to 210	14	N/A
pH	2019	7.8	7.5 to 8.3	15	6.5-8.5
Sulfate (ppm)	2019	26.6	10 to 48	12	N/A
Conductivity (uS/cm)	2019	329	243 to 648	15	N/A
Sodium (ppm)	2019	28	11.3 to 38.9	6	N/A
Total Iron (ppm)	2019	0.008	0 to 0.02	15	0.3
Total Manganese (ppm)	2019	0.02	0.001 to 0.070	14	0.05

Lead and Copper Sampled in the Distribution System								
Contaminant Name	Time Period	90 th Percentile	Sample Size	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources
Copper	04/02/2019 to 04/16/2019	0.16	60	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	04/02/2019 to 04/16/2019	3	60	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	09/23/2019 to 11/26/2019	0.23	60	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	09/23/2019 to 11/26/2019	3	60	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Lead Testing in Castle Rock

Castle Rock Water is required by State and Federal regulations to conduct periodic lead and copper testing. Samples are collected from indoor taps in designated single family homes built between 1982 - 1987. These homes have been identified because they were built during the timeframe when lead-based solder was more widely used. Lead can enter the water through contact with plumbing pipes and fixtures containing lead within the home. It does this by leaching lead and copper from your private plumbing through the corrosion of pipes, solder, faucets and fittings. As part of our treatment process, Castle Rock Water treats the water to minimize, reduce, and eliminate, to the extent possible the potential for this corrosion to occur.

If you have any concerns, or would like your home to be considered for lead testing, contact our Water Quality staff at 720-733-6000 or visit CRgov.com/waterquality. This test is performed at no cost to the homeowner.

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 epa.gov/safewater/lead.

Lanterns 1 Well Facility

Construction of three new deep groundwater wells was completed in May 2019 in an open area south



of Crystal Valley Parkway at Plum Creek Blvd. on a parcel dedicated to the Town. The wells were needed to accommodate growth-related peak demand during the irrigation season. The project consists of the three wells, controls and meter facilities, and transmission pipeline to convey the water to the Plum Creek Water Purification Facility. The wells, in the Dawson, Denver and Arapahoe formations, are expected to produce an average of 1.5 to 1.6 million gallons per day. The project was funded through system development fees from new growth only at a total cost of \$5.5 million.

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 Unregulated Contaminant Monitoring Rule (UCMR). Once EPA reviews the submitted results, the results are made available in the EPA's National Contaminant Occurrence Database (NCOD) (epa.gov/dwucmr/national-contaminant-occurrence-database-ncod). Consumers can review UCMR results by accessing the NCOD. Contaminants that were detected during our UCMR sampling and the corresponding analytical results are provided below.

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure Parts per Billion (ppb)
Manganese	2019	0.104	ND-0.52	5	ppb
Total Organic Carbon	2019	2000	2000	1	ppb
Bromide	2019	140	140	1	ppb
Haloacetic Acid (HAA5)	2019	1.63	0.81-3.4	16	ppb
Haloacetic acid with Bromochloroacetic acid (HAA6Br)	2019	1.67	0.4-4.7	16	ppb
Haloacetic acid (HAA9)	2019	2.98	1.2-6.8	16	ppb
Cyanotoxins	2019	ND*	ND	24	ppb
Germanium	2019	ND	ND	5	ppb
Pesticides	2019	ND	ND	36	ppb

*ND—Non-detected

***More information about the contaminants that were included in UCMR monitoring can be found at: drinktapp.org/Water-Info/Whats-in-My-Water/Unregulated-Contaminant-Monitoring-Rule-UCMR. Learn more about the EPA UCMR at: epa.gov/dwucmr/learn-about-unregulated-contaminant-monitoring-rule or contact the Safe Drinking Water Hotline at (800) 426-4791 or epa.gov/ground-water-and-drinking-water.



Plum Creek Diversion Project

Castle Rock Water purchased the United Water and Sanitation District's infrastructure, which includes the Plum Creek Diversion in Sedalia in November 2017. The Plum Creek Diversion has a capacity to capture up to 25.8 million gallons per day (MGD), but is only able to pump 1.15 MGD to the Castle Rock Reservoir 1. Castle Rock Water contracted with Dewberry Engineers on the design of the pump station for the existing diversion facility. The new pump station is designed to pump up to 25.8 MGD of captured water from Plum Creek to Castle Rock Reservoir 1. The pump station is designed to pump up to 8 MGD from Castle Rock Reservoir 1 to the Plum Creek Water Purification Facility (PCWPF). These pumps are also designed to be expanded to pump up to 15 MGD back to PCWPF in the future. The construction of the pump station began June 2019 and is expected to be completed by Summer 2020.

In conjunction with the diversion project, the Town has partnered with Dominion Water and Sanitation District on a joint pipeline project located between the Town of Castle Rock and the Plum Creek Diversion. The project team includes Providence Infrastructure Consultants for the design and Reynolds Construction for construction services. The project includes two 30-inch diameter pipelines and a meter facility. Dominion's pipeline will be used to wheel their WISE water through Castle Rock Water's infrastructure and down to Sterling Ranch. Castle Rock Water's pipeline will be used to supply raw water from the Castle Rock Reservoir 1 to the Plum Creek Water Purification Facility. The pipeline project is scheduled to be completed in June 2020.

Violations, Significant Deficiencies, and Formal Enforcement Actions

Castle Rock Water had one (1) violation in 2019. The event was non-health based and was reported voluntarily to CDPHE. The violation was publicly noticed on the Town’s website, CRgov.com/Water, for a 4-week period following the event.

Non-Health-Based Violations

These violations do not usually mean that there was a problem with the water quality. If there had been, Castle Rock Water would have notified customers immediately. NHB violations include missed collecting a sample (water quality is unknown), reporting the sample result after the due date, or not completing a report/notice by the required date.

Name	Description	Time Period
CHLORINE/ CHLORAMINE	FAILURE TO MONITOR AND/OR REPORT	Reporting period: 05/01/2019 - 05/31/2019 Infraction period: 05/02/2019 - 05/03/2019

Additional Violation Information

Describe the steps taken to resolve the violation(s), and the anticipated resolution date:

From the reporting period May 1, 2019 to May 30, 2019, Castle Rock Water system missed a drinking water monitoring requirement. Castle Rock Water is required to continuously monitor our drinking water, at the entry point of the distribution system, for residual disinfectant concentration at Plum Creek Water Purification Facility. An entry point-monitoring instrument records results on four-hour intervals to ensure that this concentration is never less than the regulatory requirement. The results of regular monitoring are used to make sure our drinking water meets health standards. Our Operations staff routinely places the entry point monitoring instrument in the hold position for scheduled cleaning. After cleaning, it is then placed back into service. However, for roughly a 13-hour period, beginning on the night of May 2, 2019, through the morning of May 3, 2019, our instrument remained on hold, and hence, did not record entry point results for three consecutive intervals. This failure to monitor is a violation of our monitoring requirements. Upon the discovery of the error, Operations staff immediately put the entry point instrument into service and checked the results of an upstream instrument, which also monitors residual disinfectant concentration. Employees verified by this instrument that, at no time during the 13 hour period was the residual disinfectant concentration below regulatory limits at that sampling location. Additionally, eight grab samples were taken and analyzed from the distribution system. These results were not below the regulatory limit.

What should you do? There is nothing customers need to do.

What is being done? Controls were added to the entry point monitoring equipment to ensure that when an Operator manually places an instrument on hold for cleaning, the controls will automatically return the instrument to live service in one hour if Operations staff has not already done so. This action will prevent this kind of monitoring error from happening in the future.



PCWPF Advanced Treatment

Plum Creek Water Purification Facility (PCWPF) is being expanded to include Advanced Treatment processes to manage the purification of potable reuse water. While PCWPF treatment already meets local, state and federal regulations for safe drinking water regardless of the source, the Advanced Treatment processes provide added redundancies, focus on removal of unregulated contaminants and address new standards being established for systems indirectly reusing water throughout Colorado and the U.S.

Traditional and reuse treatment systems include physical, chemical and biological processes for a comprehensive treatment for purity in drinking water. These processes are designed to remove Giardia, Cryptosporidium, viruses, suspended solids, bacteria, algae, fungi and unregulated contaminants, such as pharmaceuticals and personal care products.

Construction of Advanced Treatment process at PCWPF was awarded to Garney Construction and began on Dec. 18, 2018 with expected completion in Oct. 2020. Construction cost is budgeted at \$28,4623,538.

Upon completion, plant tours will be available for the public to learn about how the remarkable treatment processes that provide award-winning water to the community.

For more information on Castle Rock Water’s indirect reuse of water, please visit CRgov.com/ReuseWater.

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 the 90th 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.

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.



Common Questions About Water

Is my water safe to drink?

Yes. Our water meets or surpasses all the regulatory standards set by the Colorado Department of Public Health and Environment and the U.S. Environment Protection Agency. We are required to conduct frequent and routine water quality testing to ensure your water stays safe.

Why is my water discolored?

If you see black or brown water coming from your hot water tap, the culprit may be your water heater. Most manufacturers suggest flushing your water heater at least once a year. This discoloration is due to sediment settling at the bottom of the tank which over time will build up. The sediment includes naturally occurring minerals in the water, such as manganese (a black color) and iron (a brown color).

White or cloudy water may be due to air in the pipes that is released as oxygen bubbles when water leaves the tap. It is not a health risk. Other causes of this type of discoloration may be due to the time of the year – during colder months water in outdoor pipes is colder and holds more oxygen than household pipes. When the cold water enters your home or building and begins to warm, the oxygen bubbles escape which can cause the water to look milky. Another cause may be maintenance or construction on the distribution system lines. This may allow air to enter the water pipes and cause the water to have a cloudy appearance.

Brown or yellow water from the first draw, may be the internal plumbing of your home or building. This may be the issue if you only see the discoloration for the first minute or two after your tap is turned on. If you see this discoloration constantly, it may be due to sediments in the water mains. Sediment can get stirred up if there is flushing or maintenance in the area and may cause a brown or yellow color. One way to figure out whether the discoloration is due to your indoor plumbing or from the water mains is to consult with your neighbors and see if they are having similar issues with their water quality.

Please contact us at 720-733-6000 or waterquality@CRgov.com with any questions about discoloration of water.

Is the water in Castle Rock hard?

Castle Rock has moderately hard water. Hardness is caused by naturally occurring calcium and magnesium ions in the water. White spots on glassware or other fixtures are caused by the

calcium. This is not harmful. In fact, calcium and magnesium are found in many food products. For more information about hardness, visit CRgov.com/waterquality.

Why does my water taste/smell funny?

Your water may taste funny to you if you recently moved from an area containing very few naturally occurring minerals, or if you are accustomed to a certain type of source water. We sometimes get reports from customers that their water smells like rotten eggs or sewage/septic. Often, these smells are caused by gases that are formed in the household drains and may not be directly related to your water supply. Bacteria that live on hair, food, soap and other organic matter can form gases and can produce unpleasant odors. Another cause of these odors may be your water heater. If your water heater has been turned off and not in use for a while, it can produce a septic or sulfuric smell.

Is there fluoride in my water?

Yes, there is naturally occurring fluoride in Castle Rock's water. Fluoride comes from the erosion of natural deposits. The fluoride level in Castle Rock has an average of 0.4 ppm with the Maximum Contaminant Level set at 4 ppm. Castle Rock does not add fluoride to the water supply.

Is there lead in my drinking water? If so, what is the Town of Castle Rock doing about it?

There is no lead in Castle Rock Water's drinking water. Lead enters the water through contact with plumbing pipes and fixtures within the home. It does this by "leaching" caused by the corrosion of pipes, solder, fixtures and faucets (brass) and fittings. We are required to conduct periodic lead and copper testing. The purpose of this testing is to see if there is proper treatment that prevents the corrosion of the piping materials in homes. Since testing began in 1992, Castle Rock Water has only found one case in which private plumbing corroded to the point the fixture needed to be replaced.

If you would like to have your home tested for lead, please contact us at waterquality@CRgov.com or 720-733-6000.

Where can I get my water tested?

Castle Rock Water can run certain simple tests in the field or our lab, specifically relating to odor, taste and plumbing questions related to water quality. For more extensive testing, please contact CDPHE at <https://www.colorado.gov/pacific/cdphe/chemistry-laboratory>.