CALAIS WATER DEPARTMENT
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2023 ANNUAL CONSUMER CONFIDENCE REPORT

INTRODUCTION

The Federal Safe Drinking Water Act requires all community water systems to distribute an annual water quality report to its customers. This is the 2023 annual water quality report of the Calais Water Department, which covers the period from January 1, 2023 through December 31, 2023. This annual report is intended to provide you with important information about your drinking water. We know that you count on the Calais Water Department for a safe and reliable supply of water everyday, and we are committed to providing the highest quality of service to you. **There were no violations in 2023.**

WATER QUALITY

The Safe Drinking Water Act mandates that the State of Maine, along with the Environmental Protection Agency (EPA), establish and enforce minimum drinking water quality standards. These standards set limits on certain biological, radioactive, organic, and inorganic substances sometimes found in drinking water. The limits set on these substances are known as Maximum Contaminant Levels (MCL's). Two types of standards have been established. Primary Standards set required levels of drinking water quality to protect your health. Secondary Standards provide guidelines regarding the taste, odor, color, and other aesthetic aspects of your drinking water which do not present a health risk. The Calais water quality is within the levels established by EPA and the State of Maine for all Primary Standards.

Responsibility for maintaining water quality resides with the Calais Water Department's staff. The Calais Water Department staff is licensed by the State of Maine Department of Health and Human Services. We ensure that your water is safe through regular total coliform testing and chlorine residual monitoring. These tests are conducted by the Maine State Health and Environmental Testing Laboratory, certified private laboratories, and the Calais Water Department.

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 human health risk. Contaminants that may be present in source water include: (1) microbial contaminants, such as viruses and bacteria, which may come from sewage or wildlife; (2) inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming; (3) pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses and (4) organic chemical contaminants, including synthetic and volatile organic chemicals, which can come from gas stations, runoff, and septic systems and (5) radioactive contaminants which can be naturally occurring. 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 from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791) or online at:

https://www.epa.gov/ccr/forms/contact-us-about-consumer-confidence-reports

Table 1 lists regulated testing conducted by the Calais Water Department for which results were obtained in 2023. The most recent result is also included for contaminants which are not tested annually. All other tested and regulated drinking water contaminants were below detection levels. This testing is required by the State of Maine Drinking Water Program (DWP) and must be reported to all customers on an annual basis:

SOURCE WATER PROTECTION

The City adopted a Wellhead Protection Program into its existing Land Use Ordinance in 2005 and has utilized this Program to continue to manage construction activities near the well site. The purpose of this program is to develop preventative measures to assist with protecting the well site from contamination and conform to the City's Wellhead Protection Program.

TABLE 1: 2023 REQUIRED CALAIS TESTING RESULTS

CONTAMINANT	DATE	CALAIS RESULTS	EPA LIMIT	EPA GOAL	POSSIBLE SOURCES
MICROBIOLOGICAL					
Total Coliform	Monthly Testing (3 per month)	0 Positive Results	1 Positive Result	0 Positive Results	Naturally present in the environment.
INORGANICS					
Arsenic	4/25/2023	1.4 ppb	10 ppb	0 ppb	Erosion of natural deposits.
Barium	4/25/2023	0.0051 ppm	2 ppm	2 ppm	Erosion of natural deposits.
Fluoride	4/25/2023	0.16 ppm	4 ppm	4 ppm	Erosion of natural deposits.
Copper 90th Percent Value	Summer 2022	0.39 ppm (0.04 - 0.4 ppm)	1.3 ppm	1.3 ppm	Corrosion of household plumbing systems.
Lead 90th Percent Value	Summer 2022	2.9 ppb (0.6 - 3.5 ppb)	15 ppb	0 ppb	Corrosion of household plumbing systems.
SYNTHETICS					
PFAS	7/10/2023	2.67 ppt	20 ppt	0 ppb	Manmade chemical including household products, fabrics, cookware, and cleaners.
DISINFECTANTS AND DISINFECTION BYPRODUCTS					
Total Haloacetic Acids (HAA)	RAA 2023	31 ppb (20 - 62 ppb)	60 ppb	0 ppb	Byproduct of drinking water chlorination.
Total Trihalomethanes (TTHM)	RAA 2023	64 ppb (56 - 73 ppb)	80 ppb	0 ppb	Byproduct of drinking water chlorination.
Chlorine Residual	Monthly Testing	0.12 ppm (0.01 - 0.43)	4.0 ppm	4.0 ppm	Drinking water chlorination.

Definitions:

- Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water.
- Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health.
- Running Annual Average (RAA): The Average of all monthly or quarterly samples for the last year at all sample locations.
- 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 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.
- Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Units:

ppm = parts per million or milligrams per liter (mg/L).
ppb = parts per billion or micrograms per liter (µg/L).
ppt = parts per trillion or nanograms per liter (ng/L).
pos = positive samples.

Notes:

1) Total Coliform Bacteria: Reported as the highest monthly number of positive samples, for water systems that take less than 40 samples per month.

2) Arsenic: While your drinking water may meet EPA's standard for Arsenic, if it contains between 5 to 10 ppb you should know that the standard balances the current understanding of arsenic's possible health effects against the costs of removing it from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

2) Fluoride: Fluoride levels must be maintained between 0.5 to 1.2 ppm, for those water systems that fluoridate the water. Calais does not fluoridate.

3) Lead/Copper: Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.

4) TTHM/HAA5: Total Trihalomethanes and Haloacetic Acids (TTHM and HAA5) are formed as a by-product of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water. Compliance is based on running annual average.

5) PFAS: The degree of risk depends on the level of chemicals and duration of exposure. Lab studies of animals exposed to high doses of PFAS have shown numerous negative health effects such as issues with reproduction, growth and development, thyroid function, immune system, neurology, as well as injury to the liver. Research is still relatively new, and more needs to be done to fully assess exposure effects on the human body.

The data presented in Table 1 demonstrates that the City has been in complete compliance with the requirements for bacteria sampling and has not experienced any positive results for Total Coliform. Total Coliform is used as an indicator parameter for water supply bacterial contamination. This data also shows that the Water Department is in compliance with Arsenic, Barium, Fluoride, Disinfectants, Disinfection Byproducts, and PFAS. The Water Department tests every three years for lead and copper at ten homes during each sampling event. All of the copper testing has been in complete compliance with a result of 0.39 ppm as compared to the EPA limitation of 1.3 ppm. All lead sampling test results were also in compliance. The 2022 lead testing was 2.9 ppb versus an EPA standard of 15 ppb. The testing frequency was previously reduced from twice per year to once every three years due to the significant reductions in lead and copper concentrations. The City initiated a lead corrosion control program utilizing a sequestering agent which coats the piping and minimizes lead leaching into the drinking water. This program has put the City into compliance with the EPA standard for lead which is why the City is only required to test once every three years. The Water Department has been in compliance now for fourteen consecutive years. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Calais Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at: http://www.epa.gov/safewater/lead.

WATER SUPPLY/DISTRIBUTION INFORMATION

The City has been obtaining water from its two gravel-packed groundwater wells located on Water Street since August of 2002. Prior to that, water had been purchased from St. Stephen, New Brunswick. Public water service is available in the urban area of the community in a region encompassing about two square miles. The City of Calais Water Department provided water service to about 1,096 active, connected customers in 2023. The City supplied an average of 0.232 million gallons per day (MGD) or 84.5 MG of potable water to customers in 2023. The City has a 1.5 MG storage reservoir on South Street that can supply water for a period of three days during average water use to the community. This reservoir also is used for peak flow fluctuations in the system during periods of hydrant flushing and for fire protection purposes. The City maintains fire protection through 166 fire hydrants located throughout the City.

Iron and manganese occur naturally in the groundwater aquifer below the wells. The City operates a water filtration plant prior to the distribution system in order to reduce the levels of both iron and manganese to below Secondary Standards. The process uses chlorine to oxidize the iron and manganese to an insoluble, precipitated form so that these compounds can be removed by the filtration media. The City also utilizes an inhibitor for corrosion control and a polymer for iron removal optimization. The Water Department has continued its efforts in flushing the hydrants located throughout the City in order to improve water quality. The Water Department appreciates your ongoing cooperation with any disruption experienced during these flushing activities. In 2022 and 2023, the old cast iron water main along Main Street was replaced which resulted in improvements to water quality such that aggressive spot flushing is no longer being performed regularly at the end of Steamboat Street.

SOURCE WATER ASSESSMENT

The sources of drinking water include rivers, lakes, ponds, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human or animal activity. The DWP has evaluated all public water supplies as part of the Source Water Assessment Program (SWAP). The assessments included geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely our drinking water source is to being contaminated by human activities in the future. Assessment results are available at the DWP. For more information about the SWAP, please contact the DWP at telephone 287-2070.

SYSTEM IMPROVEMENTS/ HIGHLIGHTS

The Water Department continued its ongoing efforts to replace broken, frozen and obsolete water meters. Since 2004, over 1,150 meters have been replaced.

In 2022 and 2023, the City replaced the old cast iron water main along Main Street between Church Street and Steamboat Street. This has resulted in better flows, pressure, and improved water quality in that area of the City. We appreciate the patience of people experiencing the aesthetic water quality issues and travelling in the work area while the contractor was onsite working.

With assistance from the City Public Works Department, the Water Department replaced 250 feet of galvanized steel watermain on Steadman Street.

The City obtained funding in 2023 to provide a generator for the treatment plant facility and to explore drilling a new production well. The generator project was recently awarded to Border Electric.

The City added a backup generator in 2023 at the reservoir where system controls and the chlorine booster station are located. This will help ensure the water system operates properly during power outages.

The last rate increase proceeding was back in 2005 now over nineteen years ago. At that time, the City adjusted rates to cover the costs for the water supply wells and the iron and manganese filter plant. This rate adjustment also covered replacing various water mains. The final implementation of these rates went into effect April 1, 2006. The Water Department will continue to work towards optimizing operations to ensure that costs are minimized and the system is maintained. However, the distribution system is an aging infrastructure with about a third of its piping over 100 years of age. It is likely that there will be a water rate increase to cover the cost of inflation and needed improvements in 2025. The City will continue to work diligently to obtain the best funding possible for additional work in order to proactively move ahead to update the system's aging infrastructure while minimizing our customers' rates. We will be implementing a small rate increase soon in order to fund additional system improvements.

FUTURE PLANS AND NEEDS

In 2023, the process of leak detection continued with the purpose of minimizing distribution system losses. The Water Department has made significant improvements in reducing the amount of leaks from the distribution system. The water pumped to the distribution system was reduced to 0.232 MGD for 2023 compared to 0.34 MGD in 2010. This results in approximately 108,000 gallons per day less water that is pumped into the distribution system. Although a portion of these reductions are due to lower usage, significant reductions have been made by continuing to repair water mains and service components in a timely manner and upgrading water mains and services.

The City received significant grant funding to replace 3,700 feet of the existing water line on North Street between Lincoln Street and Walnut Street. Construction is expected to start in 2025. If there are remaining funds, portions of the old unlined water main on Germain Street will also be replaced. Both sections of water main have been in service since the 1800s and are beyond the end of their expected useful life.

In 2024, the Water Department will replace the old, unlined cast iron water main on Eaton Street. About 800 feet of new pipe will be installed.

Also in 2024, a new generator will be installed at the water filter plant to ensure pumping and treatment will be maintained even during power outages. This work was also supported by significant grant funding.

CONTACT INFORMATION

This report is a summary of the Water Department's activities during the past year. If you have any questions about your water quality, the information contained in this report, or your water service in general, please call the Calais Water Department at (207) 454-2760 (7:00 AM to 4:00 PM) or the City Building at (207) 454-2521 (8:00 AM to 5:00 PM). You may also direct questions or concerns to the Maine Department of Human Services Drinking Water Program at (207) 287-2070 or the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791. The Calais City Council meets monthly. Water Department customers are welcome to attend meetings for drinking water-related topics. Check with the City Office (454-2521) or City website (https://calaismaine.org/meetings) beforehand to confirm the date and time.